The Golden Hands Encyclopedia of

CRAFTS

The complete guide to
traditional and modern home crafts

Volume 21

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Golden Hands Encyclopedia of

CRAFTS

INSTITUTE OF EDUCATION FOR WOMEN
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CALCUTTA 27

Marshall Cavendish

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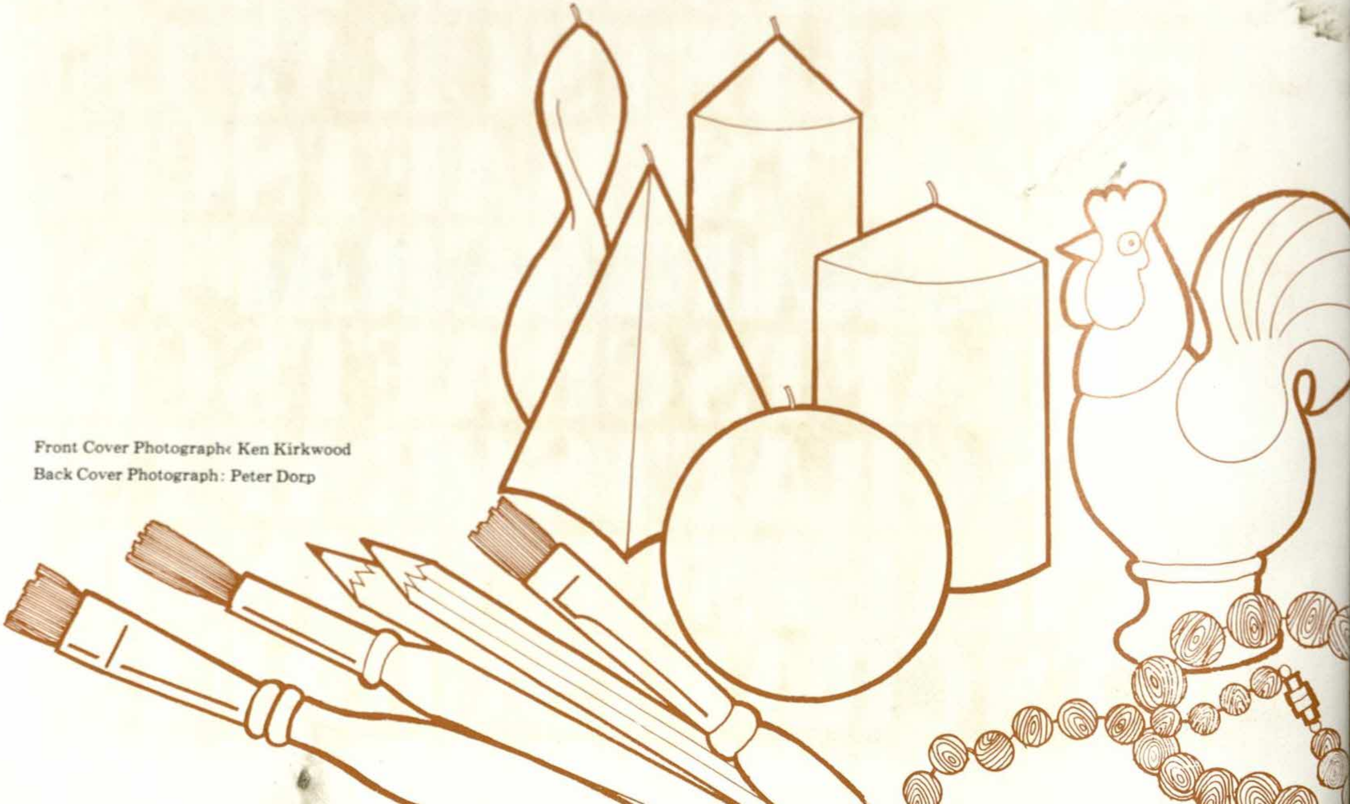

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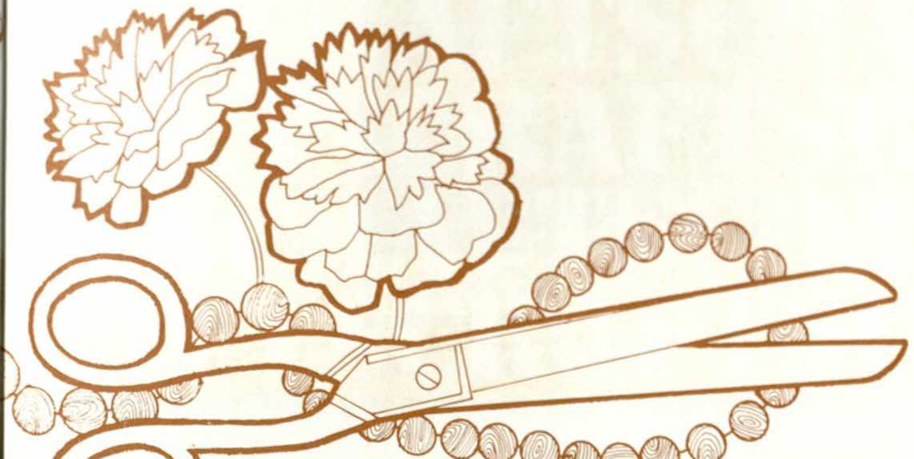

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Suppliers addresses
United Kingdom

Please send a s.a.e.
with any queries to
the suppliers below

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Clay 50. Materials at The Fulham Pottery Ltd, 210 New King's Rd, London SW6 4NY or at Southern Supplies Centre, 42 Morley Rd, Tonbridge, Kent; Harrison Mayer Ltd, Meir, Stoke-on-Trent ST3 7PX, Staffs; Ferro (Great Britain) Ltd, Wombourne WV5 8DA, Wolverhampton who also supply overseas; Wengers Ltd, Garner St, Etruria, Stoke-on-Trent ST4 7BQ. Screen printing supplies at Selectasine, 22 Bulstrode St, London W1M 5FR who also offer mail order service and catalogue (please send SAE) and Sericol Group Ltd, 24 Parson's Green Lane, London SW6 4HS who also offer mail order service.

Clay 51. A wide range of clay requisites available at Clayglaze, King's Yard, Talbot Rd, Rickmansworth, Herts. Clay tools at H W Anger & Son Ltd, 1 Mill Lane, Polstead, Colchester CO6 5AB. (Both addresses also offer mail order service). Moulds at Harrison Mayer Ltd, Meir, Stoke-on-Trent, Staffs ST3 7PX; Ferro (Great Britain) Ltd, Wembourne, Wolverhampton WV5 8AA who also supply overseas, and Podmore & Sons Ltd, Shelton, Stoke-on-Trent, Staffs. Casting slip kit at The Fulham Pottery Ltd, 210 New King's Road, London SW6 4NY or at Southern Supplies Centre, 42 Morley Rd, Tonbridge, Kent. Ornamental objects from Best of British Interior Designs, 25 Museum St, London WC1.

Leather 13. Vegetable-tanned russet cow-hide and leather working tools and dyes at J T Batchelor & Co, 146 Fleet Rd, Hampstead, London SW6 and Barrow Hepburn Leather Store, 205 Kensington High St, London W8 (both addresses also offer mail order service and Barrow Hepburn offers tuition). Pipe and ashtray at Harrods, Knightsbridge, London SW1X 7XL. Red handkerchief at Warehouse, 39 Neal St, London WC2.

Carpentry 24. Fittings at Woodfit Ltd, Whittle Low Mill, Chorley PR6 7HB, Lancs. Other materials at DIY shops and hardware stores. Ashtray, thermometer, wastepaper bin, mugs, clipboards, vase, notebook and ice-bucket at Habitat, 206 King's Rd, London SW3 and branches. Children's boots and cap from Kickers, 331 King's Rd, London SW3. Toys from a selection at Galt Toys, 30 Gt Marlborough St, London W1 and Habitat.

Carpentry 25. Fittings at Woodfit Ltd, Whittle Low Mill, Chorley, Lancs PR6 7HB (mail order only). Dowelling jig supplied by E P Barrus Ltd, 12 Brunel Rd, London W3 7UY (also available at DIY shops and hardware stores). Notebooks, ashtray and wastebin at Habitat, 206 Kings Rd, London SW3 and branches.

Carpentry 27. Dowelling jig supplied by E P Barrus Ltd, 12 Brunel Rd, London W3 7UY. Drawer units from L B (Plastics) Ltd, Firs Works, Nether Heage, Derby DE5 2JJ. (Both these items are also obtainable from DIY shops and hardware stores.) Fittings at Woodfit Ltd, Wittle Low Mill, Chorley, Lancs PR6 7HB (mail order only). Red leather desk set, stationery rack, picture frame, pen holder and address books at Harrods (see under Millinery).

Weaving 26. Spinning equipment at Handweavers Studio and Gallery Ltd, 29 Haroldstone Rd, London E17 7AN who also offer mail order service.

Weaving 27. Weaving looms and accessories at Handweavers Studio & Gallery Ltd, 29 Haroldstone Rd, London E17 who also offer mail order service. Medium Welsh yarn at Craftsman's Mark Yarns, Trefnant, Denbigh LL16 5UD N Wales (mail order only). Shawl at Laura Ashley, 9 Harriet St, London SW1.

Shellcraft 3. Shells at The Tropical Shells Co Ltd, 22 Preston Rd, Brighton, Sussex BN1 4QF; Afrasian Imports, 82 High St, Guilden Morden, Royston, Herts; Eaton's Shell Shop, 16 Manette St, London W1; The Shell Shop, 9 The Quay, Brixham, Dorset. Puffballs at craft shops and haberdashers. Stem wires, binding wires and gutta percha at florists and floral suppliers.

Basketry 21. Corn dolly kits available from Somerset House Wedmore Ltd, Station Rd, Cheddar, Somerset BS27 3AE.

Embroidery 19. Child's polo neck sweater and corduroy trousers from a selection at Dickins & Jones, Regent St, London W1A 1DB.

Embroidery 21. Twilled linen and yarns at The Needlewoman Shop, 146 Regent St, London W1R 6BA who also offer mail order service. Denim waistjacket, shirt, and plastic bangles at John Lewis, Oxford St, London W1A 1EX. Long cotton dress at Laura Ashley, 9 Harriet St, London SW1. Velvet cushions at John Lewis.

Printing 20. Ferric ammonium citrate crystals and potassium ferricyanide at Rayco Ltd, Blackwater Way, Ash Rd, Aldershot Hants (also offer mail order). Photographic processing by Atlas Photography, 4 New Burlington St, London W1. Cot, pillow, pillowcase and sheets at John Lewis, Oxford St, London W1A 1EX. Babygro at Dickens & Jones (see under Embroidery). Toys at Galt Toys, 30 Great Marlborough St, London W1.

Printing 22. Dresses at Hunter-Penrose Ltd, 7 Spa Rd, London SE16.

Enamel 13. Fine silver, sterling (standard) silver, hallmarking silver solders at Johnson & Matthey, 43 Hatton Gdn, London EC1N 8EE for personal shoppers and 100 High St, Southgate, London N14 6ET. Brittania and Sterling (standard) silver also brooch fastenings at J Blundell & Sons Ltd, 199 Wardour St, London W1V 4JN who also offer mail order service. Brooch fastenings, piercing saw, glass brush, polishing grades of emery paper, silver cleaning brush, tripoli and rouge at Charles Cooper Ltd, 12 Hatton Wall, Hatton Gdn, London EC1N 8JJ (catalogue available for 50p including postage—free to schools).

Paper 59. Cat litter granules at grocers and supermarkets.

Carpentry 26. Dowelling jig supplied by E P Barrus Ltd, 1 Brunel Rd, London W3 7UY Drawer units from L B (Plastics Ltd, Firs Works, Nether Heage Derby DE5 2JJ. (Both thes items are also obtainable from DIY shops and hardware stores) Fittings at Woodfit Ltd, Whittl Low Mill, Chorley, Lancs PR 7HB (mail order only).

Millinery 7. Florist's stem wire florist's binding wire and gutta-percha at florists and floral suppliers. Child's hat at Harvey Nichols, Knightsbridge, London SW1. Frederick Barrie dress from a selection at Selfridges, Oxford St, London W1. Walhs grey top and choker also at Selfridges. Marseilles tea set and Italian vase at Peter Jones, Sloane Sq, London SW1X 7XL. Single pink rose also at Harrods.

Metrication

In this volume you will find two systems of measurement. The first set of figures refers to the metric system and the Imperial figures follow in brackets. Wherever possible, a commonsense approach has been adopted and both sets of measurements have been worked out in round numbers. **BUT BEWARE!** This means that metric and the Imperial figures are *not* equivalent so make sure you only work with one or other set of figures.

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Creative ideas 80

Sponge printed wallpaper

In this bathroom a simple version of linocut printing has been employed. A shoe's sponge insole with a canvas base (such as a Dr Scholl's Air-Pillo Insole available from pharmacies) and household emulsion paint have been used.

It is important that the insole is canvas based as this makes a firm backing to the gouged sponge.

A simple design applied in a dark colour ensures a clear impression.

You will need:

A thick sponge insole.
Printing roller.
Sheet of glass or Formica.
Emulsion paint (preferably non-drip).
Lino cutters or sharp knife.
Palette or old table knife.
Ruler, pencil or chalk, sheet of newspaper, drinking glass or tablespoon.

Measure the wall area and then design a motif which can be repeated an exact number of times within this space.

Using pencil or chalk and ruler, mark dots on wall as a guide to motif repeat.

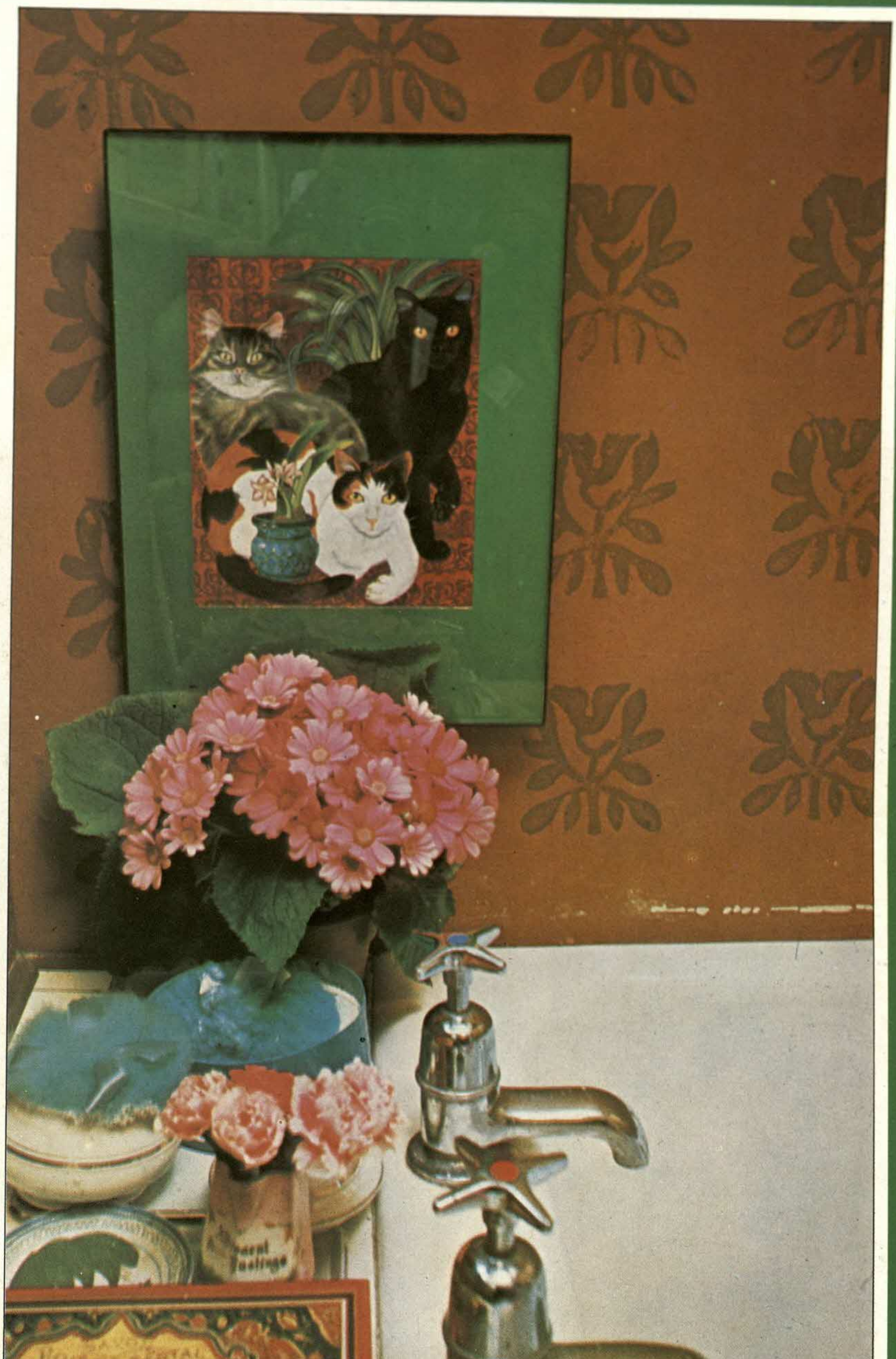
With lino cutters or a sharp knife, cut into and gouge out design from sponge. This means that the surface *surrounding* the design will be the shape printed. Alternatively, carve out the area around the design, so that the motif is left in high relief. (For details of cutting and linocut printing techniques see Printing chapter 9, page 828.)

Using palette or old table knife, spread a small quantity of emulsion paint, the width of roller, on to glass or Formica. Roll paint in several directions to distribute colour smoothly on roller, then roll evenly on to sponge.

Press painted sponge once on to sheet of newspaper to test it first.

Re-apply colour and position sponge against wall. Apply pressure evenly against back of sponge, using the end of a drinking glass or the back of a tablespoon.

Lift sponge away swiftly so as not to blur the outline.



Jessica Strang

Wallpaper printing designed by Anna Pugh—repeating a simplified version of the background in the painting.

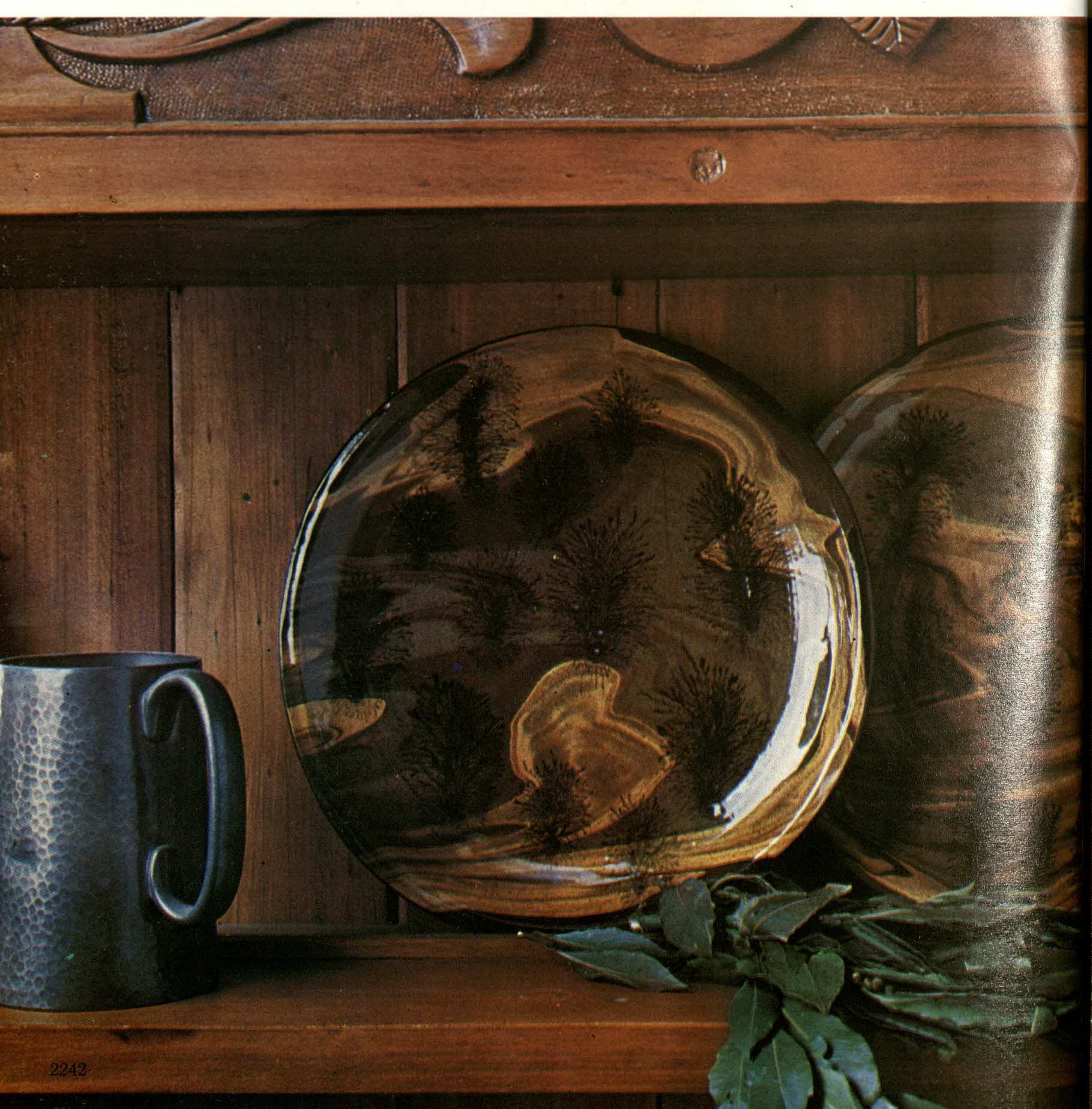
More decorative techniques

Slip-trailing and glazing are dealt with in Clay chapter 16, page 704; chapter 19, page 842 and chapter 24, page 1042. In Clay chapter 40, page 1826 and chapter 44, page 1942 on tile-decorating further techniques are discussed, most of them applicable to other pottery forms as well as to tiles. Here are four more forms of decoration.

Mocha ware and wax resist should be within the scope of most people, but screen printing and, especially, lustreware are sophisticated techniques which cannot be mastered instantly. It is always advisable, when trying out a new decorative technique, to experiment on some odd tiles or unwanted pots, rather than risk spoiling a special piece you have made.

Mocha ware

Mocha ware, which probably originated in Persia a few hundred years ago, became quite a popular form of English

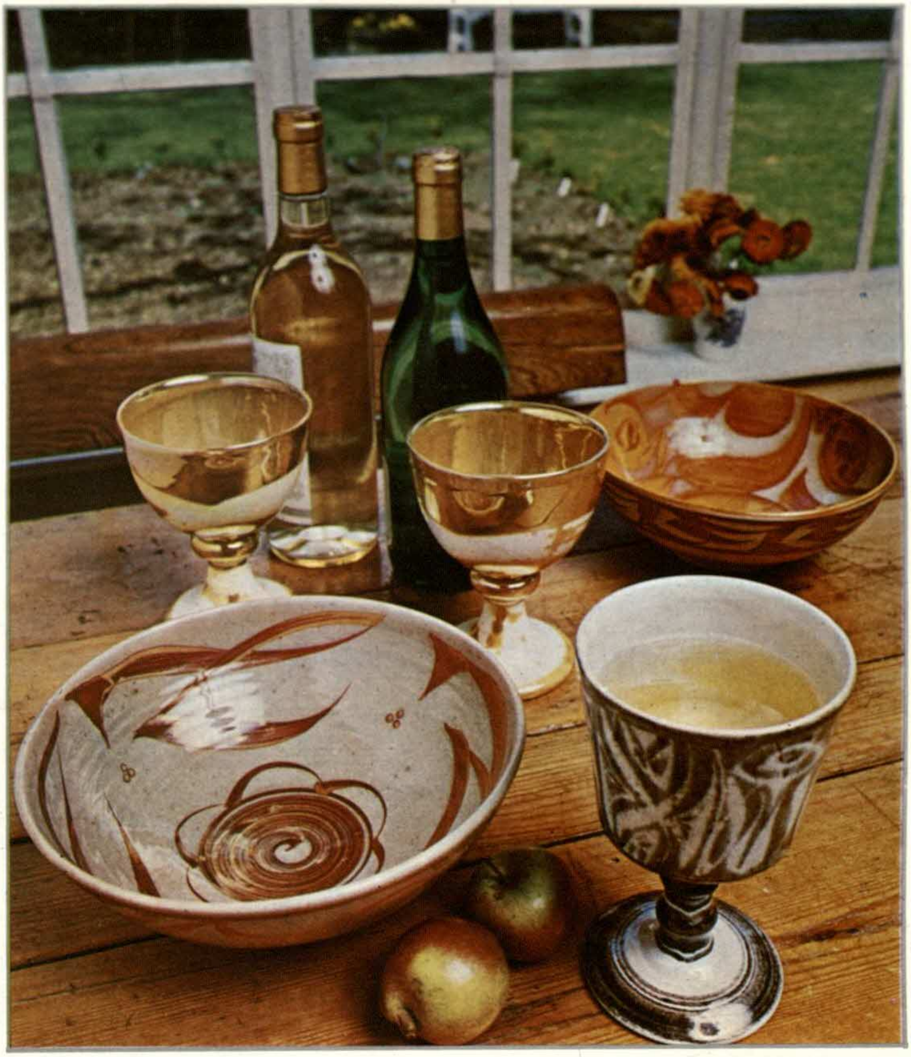


Mocha ware tree motifs on slip-trailed surfaces suggest surreal landscapes. Designed by Stephen Spicer.

decoration in the 19th century. It is rarely used now—probably partly because it is almost too simple and easy. The characteristic motif is a fronded tree-like form, repeated at random over the decorated surface.

The principle is to allow a pigment to run through wet slip—but the pigment must be supported in a deflocculent. The deflocculent can take various forms—for example, in Persia, camel urine was recommended. Later, coffee was used, and the English potters of the last century chewed tobacco and spat their own deflocculent (which is why Mocha ware has been called spit glaze).

Nowadays deflocculent is usually made by emptying a cheap cigarette into a container, adding about three teaspoonsful of boiling water, leaving the mixture to soak for a day, stirring it and straining off the liquid through a fine mesh sieve. Half a teaspoonful of on-glaze colour pigment (generally black, and always very finely ground) is added to the deflocculent and the result is sieved again. The leather-hard pottery is then slipped, held at an angle, and the mixture dropped on to it with an eye dropper. Gravity causes the liquid to flow and the typical tree pattern to appear.



Steve Bicknell

Lustre bowls and wax resist goblet designed by Alan Caiger-Smith; gold lustre goblets by Margery Clinton.

Steve Bicknell

Wax resist

Simple resist work is usually done on either raw or biscuit-fired clay. A design is painted on the clay body with a material, generally wax, which will repel glaze. The entire body is then dipped into glaze which will only 'take' on the background unpainted areas. The wax disappears in the firing.

Wax crayons can be used, but it is more usual to apply resists in liquid form with brushes. Cold silicone waxes and emulsions are the most popular because finer and more delicate work can be provided and also brushes can be cleaned quite simply in washing-up liquid. Hot wax-and-oil mixtures are damaging to brushes, but necessary for resisting slips which are of a thicker consistency.

Few resists will resist completely, and there is often an overlying speckle, which can, in fact, be very attractive. A more important snag is that it is very difficult to alter or erase a resist design without refiring it away—the application has to be right the first time. However, wax resist is an agreeable form of decoration which lends itself equally to delicate work and to flamboyant designs.

Lustres

Lustres are beautiful and effective, but not easy to work with. They are strictly not for the beginner, and even experienced potters learn the techniques by trial and error.

Many pigment mixtures will give a lustre provided they are applied on a suitable glaze, one which will soften below 700°C (1292°F). The main problems are mixing a sound glaze which will do this, and determining the best temperature and duration for the reduction, both of which depend on the properties of the glaze.

There are three kinds of lustre: on-glaze lustre, resin lustre and smoked lustre. Electric kilns, which create an oxidizing atmosphere, are not suitable—you need the reducing atmosphere of a fired kiln. This smoky atmosphere causes oxides to be reduced back to the original metal. Lustre is, in fact, a thin layer of metal.

On-glaze lustre is produced when silver, copper, bismuth and other metallic compounds are incorporated in a glaze. These compounds should not constitute more than 2½% of the glaze. The glazed object is then fired to maturing point and strongly reduced during cooling. The result is a dramatic reflecting and iridescent surface. The original glaze should be one which begins to soften at a fairly low temperature, no more than 700°C (1292°F), otherwise the pigments will volatilize and the effect will be lost.

Resin lustres, such as 'Liquid Gold', are sophisticated and costly preparations which are applied as on-glaze colourants and fired at about 780°C (1436°F). They do not require deliberate reduction because reducing agents are incorporated into the mixture. However, these materials have to be applied very carefully or the result will be uneven.

The surface must be absolutely clean and dust-free, and painting must be done where there is no dust or grit in the air or it will stick to the work. The clean, bright surfaces of these materials do not appeal to everyone, but quieter, darker, crackled effects can be achieved by firing the preparations beyond the recommended temperature.

Smoked lustres are silver and copper compounds, finely mixed with clay or ochre and painted on to the fired surface of a glaze. They are reduced as the glaze begins to soften in a third firing. The clay or ochre is rubbed off after the firing and the reduced metal or alloy will, if the firing was correct, remain deposited on the glaze surface to give a remarkable range of coloured and reflecting finishes. This pigment is easier to apply than resin lustre preparations—it can be brushed, poured, sprayed or stamped on, but the firing is much more difficult.

Screen printing

This is a refined form of stencilling and is an exciting method of decoration because large bright areas of colour can be applied—a technique which is extremely difficult with a brush. A high proportion of commercial pots and tiles are decorated in this manner, but few studio potters use the technique and this is surprising because the process requires only the simplest equipment, none of it costly.

Dick Miller

Pulling the squeegee across the screen.

Because it is necessary to print on a flat surface, tiles are the obvious choice and, for a beginner, commercial tiles are best. Handmade tiles are rarely totally flat and any upward rise towards the corners, however slight, will tear the taut screen fabric.

The basic necessities are all available from screen printing suppliers: a wooden frame hinged to a baseboard, the inside measurement of which must exceed the design by at least 5cm to 8cm (2" to 3") all round; stencil materials, cartridge paper or film stencils; ceramic printing colour, available ready-mixed in a suitable screen printing medium; water-soluble screen stopper or filler and a rubber or plastic squeegee.

Other necessities include screen fabric, which should take the form of fine mesh nylon for enamel colours and coarser mesh nylon for coloured glazes; turpentine substitute and cotton cleaning rags; palette and sharp knives; broad sticky tape and a staple gun.

Preparing the screen. The fabric has to be stretched evenly and tightly across the wooden frame. It should be cut out 5cm (2") larger than the frame all round and 2.5cm (1") should be folded in on all four sides and ironed flat. The fabric will then be 2.5cm (1") larger than the frame.

The centre of one side of the fabric is stapled to the centre of one side of the wooden frame. The centre of the opposite side of the fabric is then stapled to the opposite side, stretched as tightly as possible. This process is repeated on the other two sides. The process is then continued, working outwards towards the corners on all sides. The fabric is washed and the screen is ready for use.

Paper stencils. The simplest stencil is a sheet of thin cartridge paper. The snags are that it will not last long, designs must be of the simplest, and prints tend to be smudgy. The advantage is that little preparation is required for initial experiments with paper stencils.

The design is cut out of the paper and the stencil stuck on to the screen with water-based glue. It must be glued down evenly, right to the edges, without stretching the fabric. Excess glue is wiped away with a damp cloth. If the stencil does not reach right to the edge of the screen, the surround is blocked out with screen filler. When glue and filler are dry, the inside join between fabric and frame is blocked out with sticky tape.

Cut film stencils. 'Blue' or 'green' cut film stencils are suitable and last longer than paper. Though water soluble, they can withstand the oil medium used with the ceramic colour and also the turpentine substitute used for cleaning the screen after use.

The film is cut slightly larger than the design, placed over the design, film side uppermost, and fixed in position with Sellotape. A sharp knife is used to cut the design out of the film, leaving the backing paper intact. The cut film stencil is then applied to the screen according to manufacturer's instructions.

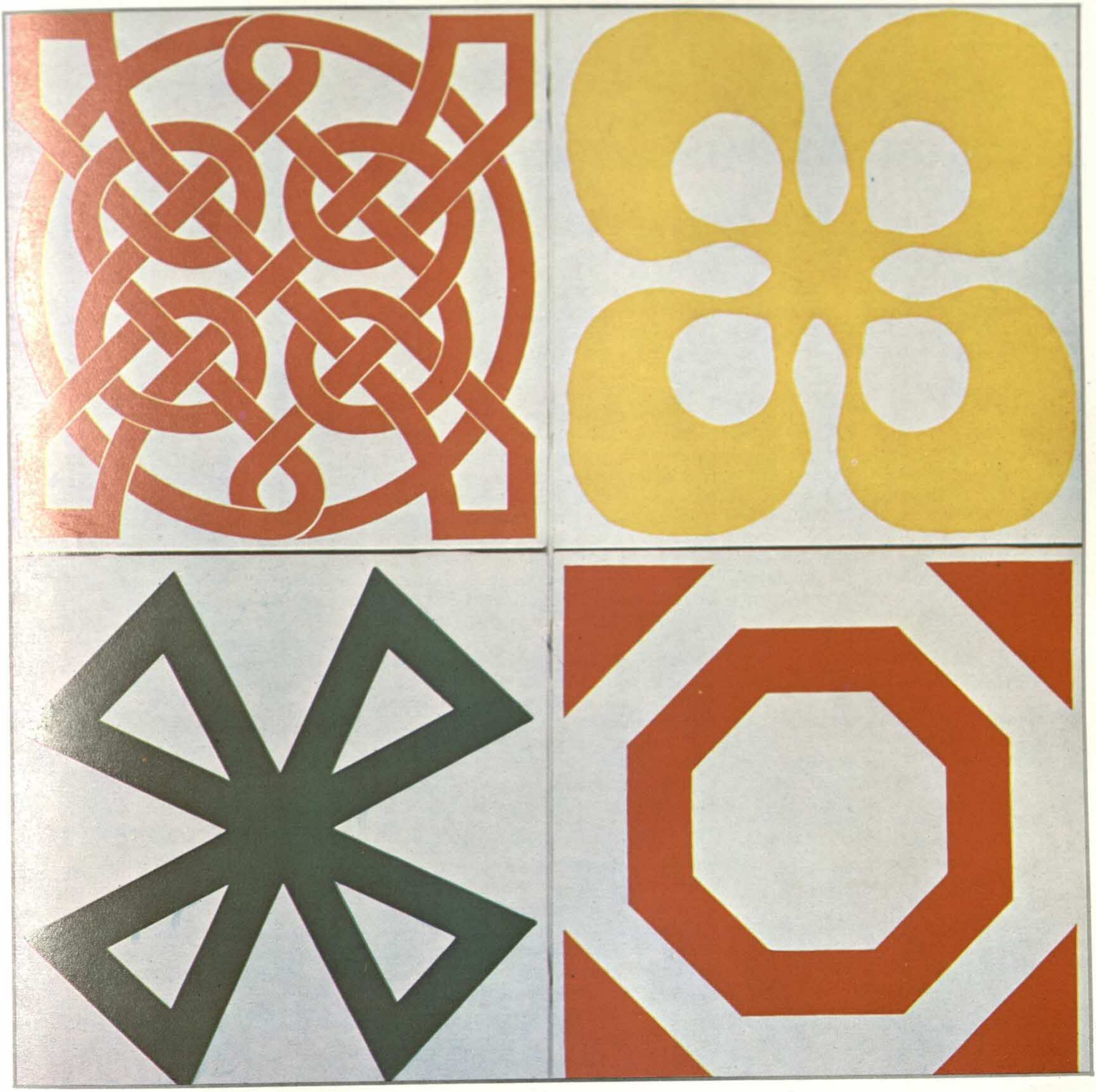
A piece of newspaper is laid on the inside of the screen to cover the stencil. An iron is set to the temperature recommended for the screen fabric. The iron is pressed firmly on to the newspaper and moved quickly over the surface. The adherence of stencil to screen is judged by the slight change of colour which takes place—when the colour change covers the whole of the film, the stencil is fixed.

Practice is essential because too much ironing can reverse the process—if this happens the stencil will never adhere.

Backing and support are peeled away and areas which should not print are blocked out with screen filler. The edges of the fabric are blocked with sticky tape as before.

Stencils are now ready for printing.

Colours. Either printing enamel colours (firing temperature 700°C to 800°C (1292°F to 1472°F) or print underglaze colours, used under or on a glaze (firing temperature 900°C to 1250°C (1652°F to 2288°F), are suitable. They can be bought ready prepared, mixed in a ready-to-use screen-printing medium.



Melvin Grey

Enamel printed Rye tiles designed by Martin Secunda, Tina Cole, John Frost and David Vicary.

Enamel colours are smooth and dense when fired, consistent in colour and give sharply defined edges to a print. They come in a wide range and are the most reliable colours to use.

Underfiring can cause loss of brilliance and possible loss of adhesion. Overfiring, to about 900°C (1652°F), can produce interesting effects. Colours can be overprinted, but experiment is necessary because some colours will be changed or obliterated by others. Printing on a coloured background is effective but may affect the print.

Underglaze colours are treated in the same way as enamels and can be purchased in the same forms. The exact temperature to which they have to be fired will be a little less than the melting temperature of the glaze. Glaze stain colours become a more integral part of a pot or tile and the colours are soft and subtle.

Printing. First the colour must be thoroughly mixed. The screen is then supported just above the surface to be printed. The gap should be just enough so that a finger pressed gently on to the fabric can touch the item to be printed all over the design.

What is judged to be the correct quantity of colour is placed at the far end of the screen, right across the squeegee. The squeegee is held firmly with both hands and the colour is pulled right across the design. It is important to achieve this with one 'pull' of the squeegee and to continue across until the colour is clear of the open stencil. Screen and squeegee are cleaned with turpentine substitute before re-use.

Firing. It is essential to fire very slowly to start with, up to about 400°C (752°F), because the printing oils have to burn off. There is a strong smell while this is happening and it is vital to ventilate the kiln by keeping door and damper open. When the smell disappears, the door is shut and the firing is finished normally.

How to make patchwork toys

Cloth — toys 13

Delight your children with these decorative and amusing patchwork toys.

These delightful patchwork toys can be made for next to nothing from scraps of fabric. Whether they are sewn by hand or machine, they are quick and simple to run up.

Instructions and patterns are given for a dog, cat, horse and doll. The patterns can be adapted to any size and new designs can be created to make a menagerie of fanciful creatures, including fish, reptiles, and birds.

Designs do not have to be confined to toys—larger-than-life animals can serve as cushions, while miniature animals can form parts of a mobile or may be used for Christmas tree decorations.

Making the toys

Make paper patterns for the toys from the graph patterns overleaf. A seam allowance of 1cm (⅜") is included.

You will need:

Scraps of assorted plain and patterned, brightly-coloured fabrics of equal weight and thickness.

Matching thread.

Kapok for stuffing.

Embroidery cottons for features.

Knitting wool for horse's mane and doll's hair.

Scraps of coloured felt for doll's hands and boots.

Scraps of felt for doll's and horse's features, as illustrated (optional). Felt can be used for the other toys' features if desired. The advantage of using felt is that it does not fray and can be glued directly to the face after trimming away the seam allowance.

Adhesive such as Evo-stik (optional).

The dog

The completed dog is 1m (3′4″) long.

☐ Using the paper patterns and following the graph pattern overleaf, cut two head pieces from plain fabric.

☐ Cut two pieces each for cheeks, eyes, irises and tail out of patterned fabric.

☐ Cut eight foot pieces, and four ear pieces out of patterned fabric.

☐ For the body, make up two pieces of patchwork in squares and rectangles to measure 70cm (28") by 27cm (11") plus 1cm (⅜") seam allowance all round. (For machined and hand sewn squares and rectangles see Patchwork chapters 1 and 2, pages 154 and 180 respectively.)

☐ Place each head piece to the short end of each patchwork body piece, right sides facing, and sew along the edge to join.

☐ Place one completed head and body section over the other, right sides facing, and stitch round the edges, leaving the tail end open for stuffing.

☐ Turn right side out and stuff head and body firmly with kapok.

☐ Turn in seam allowance of opening and slip-stitch edges together.

☐ With right sides facing, stitch the two tail pieces together, leaving the body end of the tail open.

☐ Turn right side out and stuff.

☐ With right sides facing, stitch the foot pieces together in pairs, leaving the top ends open. Turn each foot piece right side out and stuff.

☐ Turning in the seam allowance as you go, oversew tail and feet to body in positions shown in fig.1.

☐ With right sides facing, stitch each pair of ears together, leaving an opening to turn through.

☐ Turn right side out and, turning in the raw edges, topstitch around edges and sew ears to body (see fig.1).

☐ Sew or stick eye pieces and cheeks to face.

☐ Embroider mouth and eyelashes.

The cat

The completed cat is 90cm (3′) tall.

☐ Using the paper patterns and following the graph pattern overleaf, cut two head pieces from plain fabric.

☐ Cut four leg pieces on the fold, and two eyes, two irises, two cheeks, two tail pieces and four ears from patterned fabrics.

☐ For the body pieces, make up two pieces of patchwork measuring 40cm (16") by 32cm (12½") plus seam allowance all round.

☐ With right sides facing, stitch the two body pieces together, leaving an opening to turn through.

☐ Turn right side out and stuff.

☐ Turn in raw edges and slip-stitch opening.

☐ With right sides facing, stitch tail pieces together, leaving an opening to turn through.

☐ Turn right side out and stuff.

☐ Turning in raw edges as you work, sew tail to back body piece in position shown in fig.2.

☐ With right sides facing, stitch the two head pieces together, leaving the neck edge open.

☐ Turn right side out and stuff.

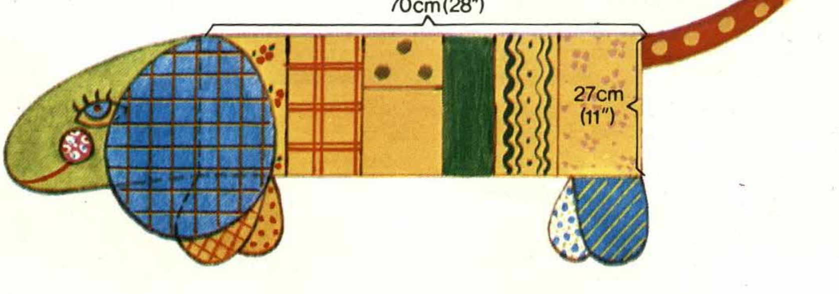
☐ Stitch each pair of ears together, right sides facing, and leaving the base edges open.

☐ Turn right side out.

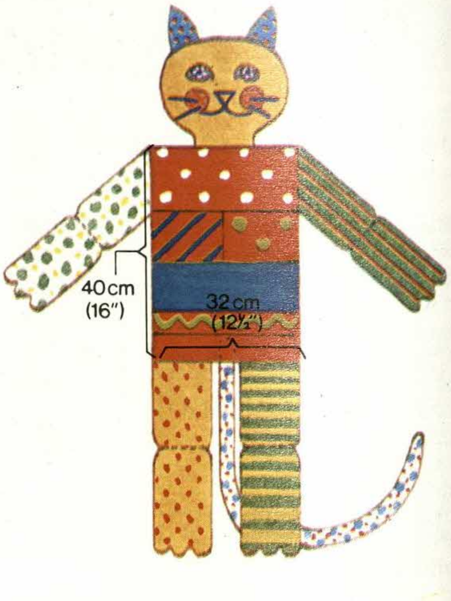
☐ Topstitch around edges as for dog and oversew each of the ears to the head, and the head to the body (see fig.2).

☐ With right sides facing, fold leg pieces in half along fold line, and stitch round edges, leaving the top edges open.

1. *Position of pattern pieces for dog.*



2. *Detail of assembled cat.*

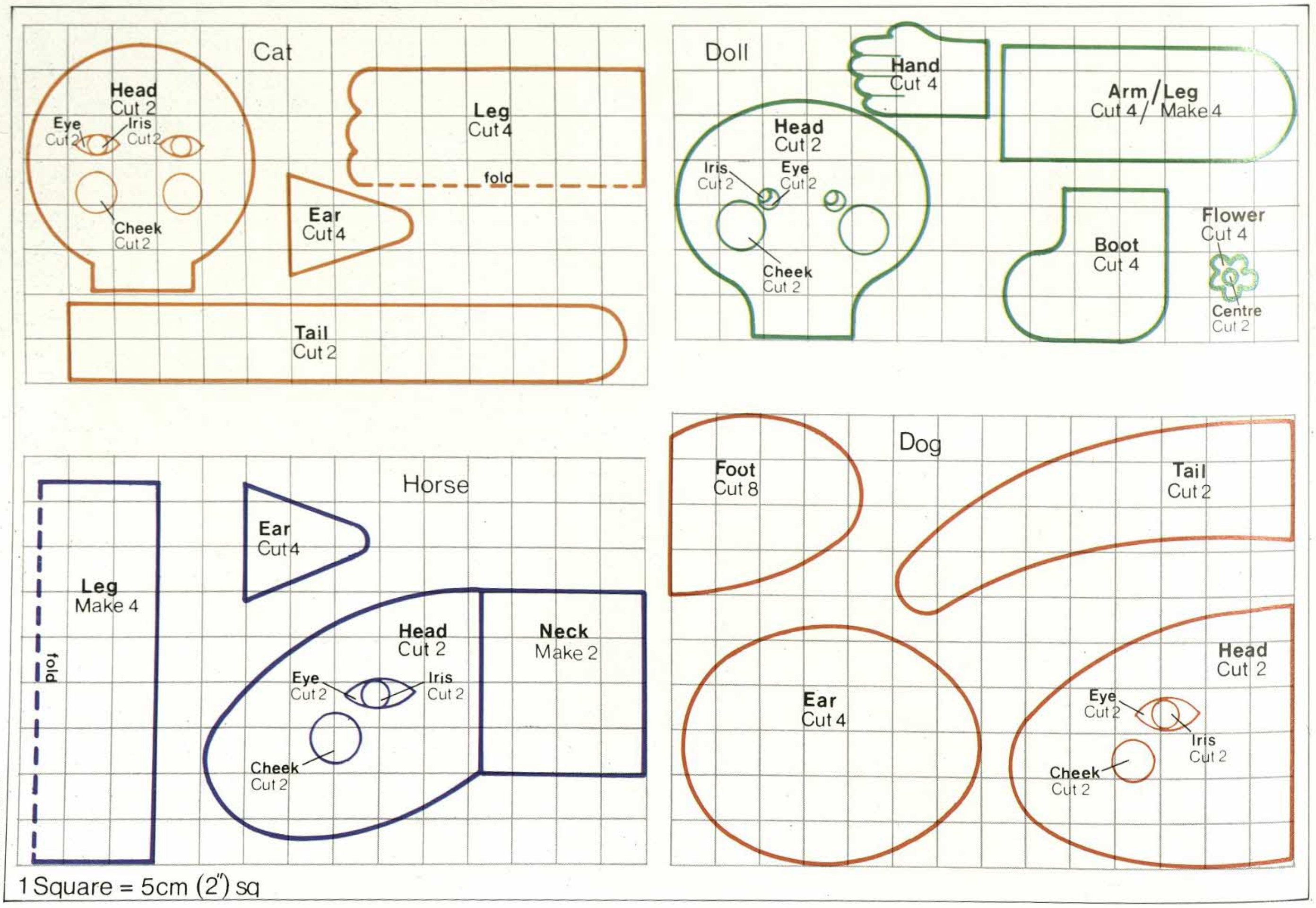


Coral Mula

Liz Whiting

Above: note the careful choice of fabrics in this jolly giant horse.

Right: this charming patchwork cat would make an excellent present.



Trevor Lawrence

☐ Turn right side out and stuff.

☐ Work a row of firm running stitches across the middle of each leg section, taking the needle through all the layers, to indicate a joint (see fig.2).

☐ Turning in raw edges as you work, oversew legs to body in position shown in fig.2.

☐ Sew or stick the eye pieces and cheeks to the face.

☐ Embroider in the nose and mouth.

☐ Sew or stick narrow strips of fabric to the face for whiskers.

The horse

The finished horse is about 1.1m (3′8″) long.

☐ Using the paper patterns and following the graph pattern, cut the pieces out of fabric.

☐ Cut two head pieces out of plain fabric.

☐ Cut two eyes, two irises and two cheeks out of coloured felt.

☐ Cut four ear pieces from patterned fabric.

☐ Make up two patchwork rectangles measuring 65cm (26″) by 36cm (14½″) plus seam allowance for the body pieces.

☐ Following the appropriate pattern pieces, make up four leg pieces and two neck pieces out of patchwork.

☐ With right sides facing, join each head piece to one neck piece, and then the base of each neck piece to one body piece.

☐ With right sides facing, sew the two complete head and body sections together, leaving an opening to turn through.

☐ Turn right side out, stuff, and slipstitch opening, turning raw edges under.

☐ With right sides facing and each leg piece folded in half along fold line, stitch round the edges, leaving top edges open.

☐ Turn legs right side out and stuff.

☐ Work a row of running stitches across the middle of each leg, as for the cat.

☐ Turning in the seam allowance, oversew each leg to body in position shown in fig.3.

☐ With right sides facing, sew each pair of ears together, leaving base edges open.

☐ Turn right side out and, taking in the raw edges as you work, topstitch around edges and oversew to body.

☐ Make six bundles of 25cm (10″) lengths of wool for the mane and knot each one in the middle.

☐ Sew to horse's head and neck along seam in positions shown in fig.3.

☐ Make another bundle of wool, using 70cm (28″) lengths, for the tail. Knot in the centre and sew to body.

☐ Sew or stick the felt eye pieces and cheeks to the face.

☐ Embroider in mouth, nostrils and eyelashes.

The doll

The completed doll is about 1.1m (3′8″) tall.

☐ Using the paper patterns and following the graph pattern, cut the pieces out of fabric as follows.

☐ Cut two head pieces and four arm pieces out of plain fabric.

☐ Cut four hand pieces, four boot pieces, two eyes, two irises and two cheeks, four flowers and two flower centres from coloured felt.

☐ For the body, make up two patchwork rectangles measuring 39cm (15½″) by 29cm (11½″) plus seam allowance. Scraps of fabric can be used ingeniously to represent buttons and braces as illustrated.

☐ Following the appropriate pattern pieces, make up four leg pieces in patchwork.

☐ With right sides facing, sew the two body pieces together, leaving an opening to turn through.

☐ Turn right side out and stuff.

☐ Turn in seam allowance and slipstitch the opening.

☐ Sew or stick the features to one head piece and decorate the cheeks with two of the felt flowers.

☐ Embroider in the mouth and nose.

☐ With right sides facing, stitch the two head pieces together, leaving the neck edge open.

☐ Turn right side out and stuff.

☐ Turning in seam allowance, oversew head to body.

☐ With right sides facing, sew the arm pieces together in pairs, leaving the hand edges open.

☐ Turn right side out and work a row of gathering stitches round each hand edge.

☐ Stuff the arms.

☐ With right sides facing, sew the hand sections together.

☐ Turn right side out and stuff lightly.

☐ Draw up the gathering stitches, and sew the hands over the line of gathering stitches.

☐ Make joints in arm pieces as for cat.

☐ Make up the legs as for the arms, using the patchwork leg pieces and the felt boots.

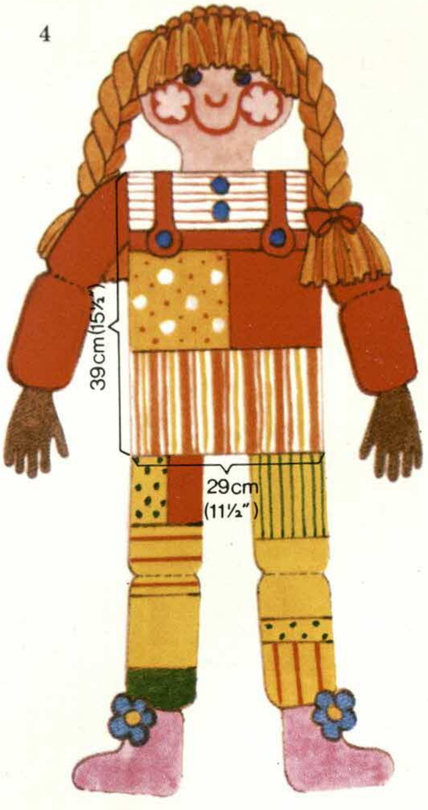
☐ Decorate the boots with felt flowers and flower centres.

☐ Sew the arms and legs to the body in the positions shown in fig.4.

☐ Cut lengths of wool 90cm (36″) long for the hair and make into a bundle. Sew the centre of the bundle of wool to the centre back of the head. Plait and tie with ribbons on either side of the head.

☐ Make fringe, using ten small bundles of wool as for the horse's mane.

4



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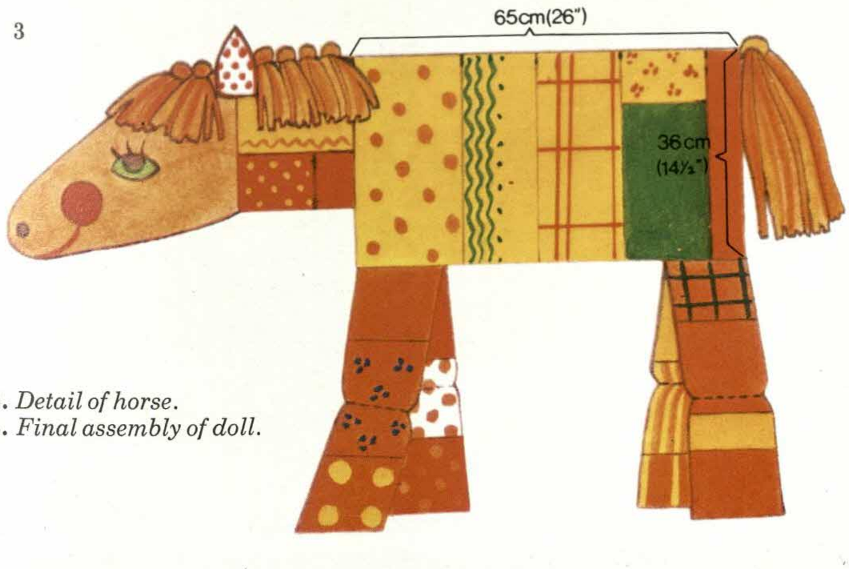


3. *Detail of horse.*
4. *Final assembly of doll.*

Coral Mula

Modular unit furniture system

Furniture designers, in an attempt to cater for storage needs, developed versatile units which can be arranged to suit almost any setting. Based on the multiples of a simple box, the merit of such systems of storage furniture is their flexibility. They can be adapted without major upheavals to suit the needs of a living-room, bedroom or kitchen while maintaining a visual unity.

The modular unit

This series of chapters shows you how to make a system of storage furniture, based on a simple square module, that can be used throughout the house. The primary module has a square front elevation of 25cm (10")—ie when viewed from the front. Two opposite sides of this unit can be doubled to form a rectangle. By continuing this doubling up process, larger square and rectangular units are made which can be used in any combination.

As each unit is complete in itself, the system enables you to build up a collection of furniture, unit by unit, according to your needs and budget. The simplicity of the design and number of possible variations enable the units to blend with almost any setting.

The basic construction of the module is the same for all the units, regardless of size. They can be either wall hung or free standing arrangements; combinations of both enable each unit to be built up to the height best suited for its purpose.

Materials

The units can be made from chipboard (Carpentry chapter 6, page 355), which is pre-veneered in either a wood or plastic finish. A pre-veneered plastic finish, such as Contiplas, is more practical for bathrooms, kitchen surfaces and children's playrooms because it is durable and easy to clean.

The measurements used in the construction of the modular furniture are given in metric only. This is necessary because a convenient size had to be decided on for the design of the units. Overall dimensions will be given in both metric and imperial to give an idea of the finished size of the units.

A pre-veneered chipboard, such as Contiboard, offers a wide selection of wood finishes. Contiboard is sold in sheets of 183cm (6') and 244cm (8') lengths and a number of widths, ranging from 152mm (6") to 914mm (36"). The long edges are lipped, ie the surface finish is carried over to the edge. Matching veneer strips can be bought for finishing cut edges.

All the units illustrated in these chapters have been made from Contiboard 16mm (⅝") thick. The battens can be stained or painted the required colour.

Finishes

If using a raw or unfinished chipboard the surface and edges must be sanded to a smooth finish. Cheaper grades of chipboard tend to have a crumbly core and cut edges will need filling with a proprietary cellulose filler before painting. When painting, always apply a suitable primer, undercoat and one or two topcoats.

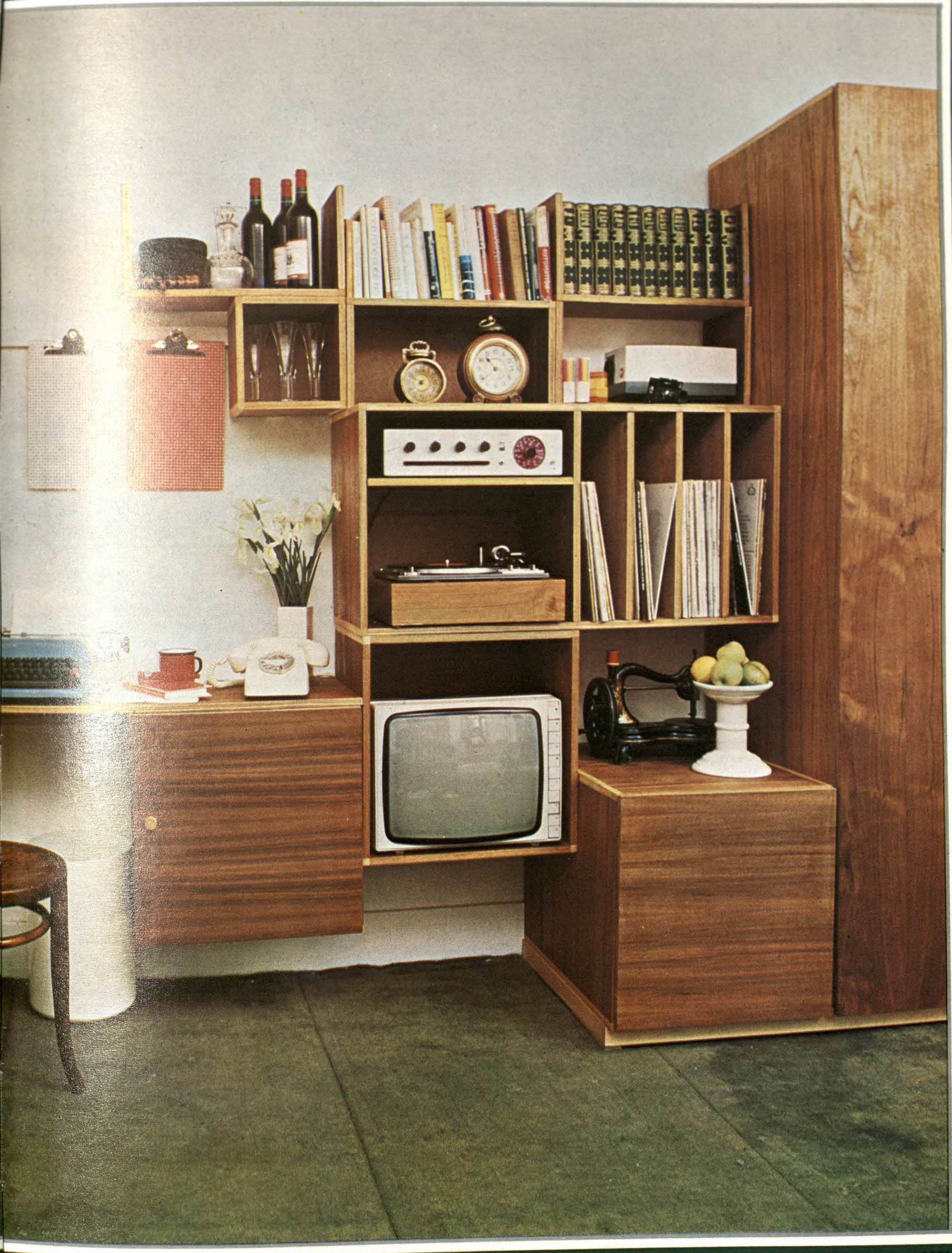
Wood veneer boards can be rubbed along the grain with a fine grade glasspaper and then coated with a clear varnish to bring out the natural colour of the veneer. A colour stain can also be applied should you want to change the appearance of the wood.

Veneer chipboards, such as Contiboard, are available in 'white wood' (pine), teak, mahogany and sapele.

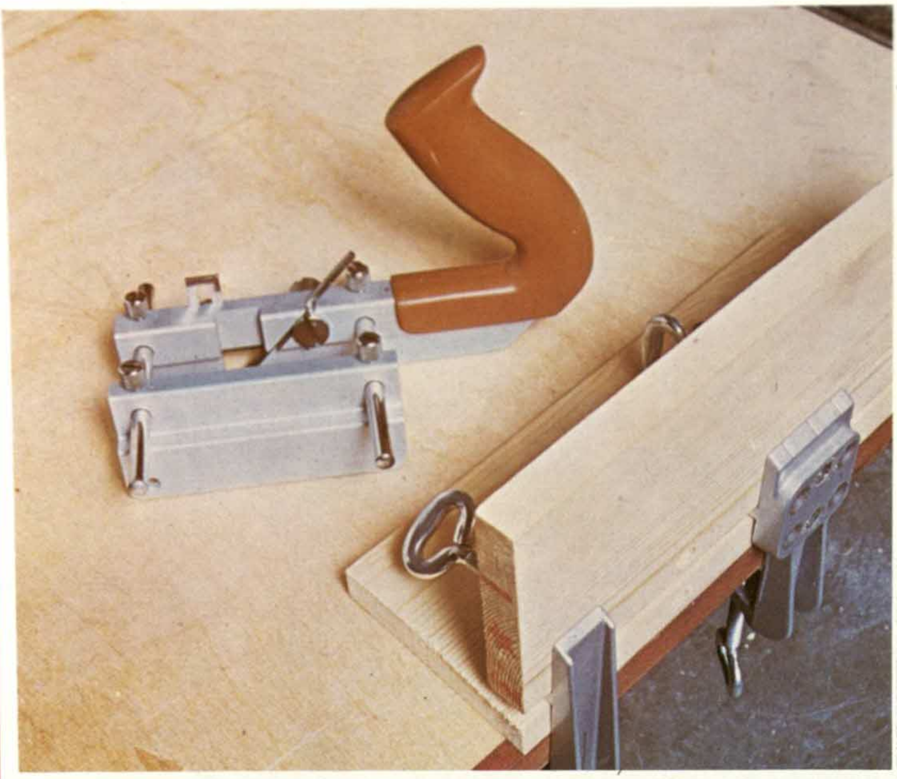
Planning

An important aspect of installing furniture is making sure it is both convenient and comfortable to use. The most carefully laid out cupboard interior will be of little value if the whole unit is so placed that its interior and contents are inaccessible.

An arrangement of modular unit furniture making use of both wall hung and free standing units. The units are made from natural teak veneer chipboard which has been finished with clear varnish. The units are all based on the basic unit described in this chapter. The larger units are dealt with later. Designed by Jackson Day Designs.



Steve Bicknell



Ray Duns

Tool box

Plough plane. This is a useful special-purpose plane used for planing grooves. The plane has an adjustable side arm, known as the fence, which is used to determine how far in from the wood's edge the groove is to be cut. The depth of the groove is controlled by an adjustable depth gauge attached to the main body of the plane.

When ploughing, always keep the plane vertical and the fence pressed flat against the side of the wood. Start the groove at the furthest point away from you and gradually work your way backwards.

Dowelling jig. The jig enables you to position holes for dowel joints accurately. It has two clamps, one which holds the wood in position. The other clamp has three pairs of holes in it and is positioned so the required holes are over the places for the dowels. The holes are then drilled using the holes in the clamp to guide the drill bit.

Construction

To introduce the construction techniques the basic unit is built (fig.1a). It is 25cm (10″) square and 22.9cm (9″) deep.

You will need:

Four pieces 16mm thick chipboard, 21.8cm long x 229mm wide. (Two boxes can be cut from one piece of chipboard 183cm long and 229mm wide.)

Four ramin battens, 16mm x 16mm and 22.9cm long. Ramin is a hard and close-textured timber with a clear, even grain.

60cm of 6mm dowelling.

One piece 3mm hardboard, 22.4cm x 22.4cm—for the back panel.

2 pieces softwood 38mm x 12mm and 21.8cm long, for wall mounting.

White woodworking adhesive.

Tools:

Panel saw or circular saw attachment and tenon saw.

Carpenter's square, trimming knife, spirit level and pencil.

Drill with 6mm wood bit and No.8 masonry bit.

Plough plane and dowelling jig.

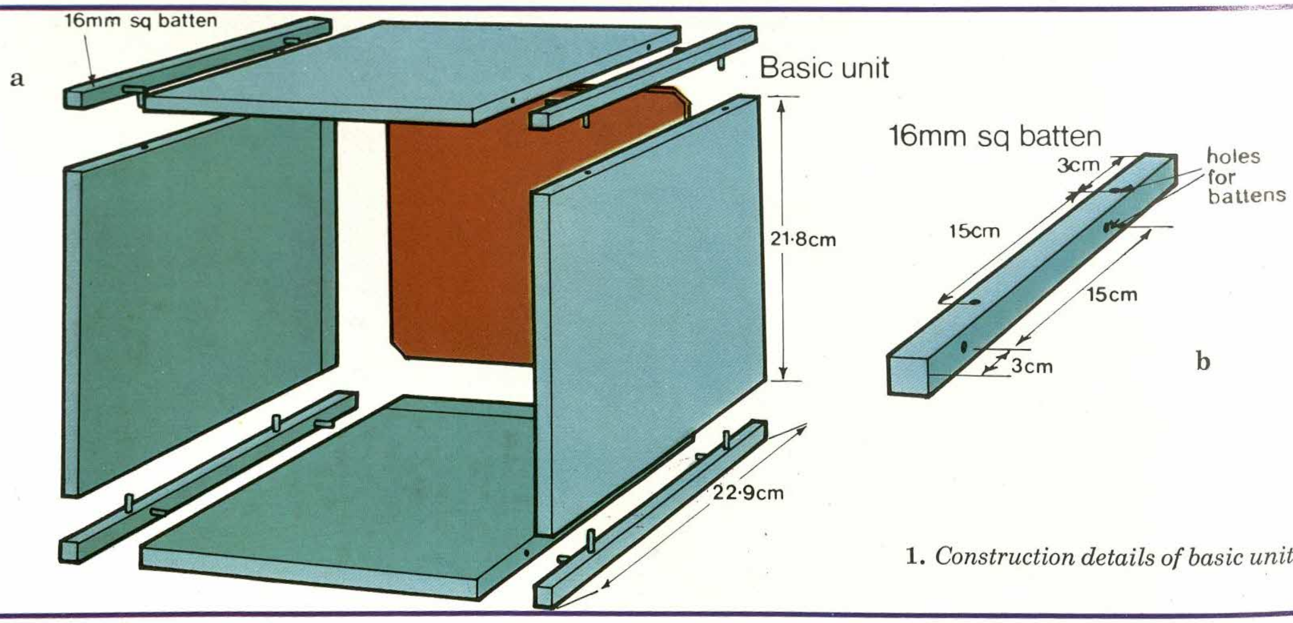
☐ Have the chipboard cut to the required size by the timber merchant. If you are cutting the board, allow about 2mm for each saw cut.

Note: a scored line made with a marking knife prevents the surface splitting when being cut.

☐ Mark the centres for the two pairs of dowels on each batten (fig.1b).

☐ Using a dowelling jig and a drill with a 6mm wood bit, make holes 9mm deep in the battens and 16mm in the chipboard edge to correspond with the holes in the battens.

☐ A back panel can be fitted, especially if the unit is wall hung. This is made from 3mm hardboard held in place in



1. *Construction details of basic unit.*

Bob Harvey

Steve Bicknell

The units can be finished to suit particular settings. Here, they have been painted brightly and used for general storage in a children's room.

a groove 3mm deep cut on inside face of the panels, 12mm from the back edge. Use a plough plane or circular saw. If the latter is used and depending on the thickness of the blade, two cuts will probably have to be made, adjusting the blade guide with each cut to produce the required width of groove. The timber merchant from whom you buy the chipboard may be prepared to cut these grooves.

☐ Cut off 7mm from the corners of the back panel (see fig.1a).

☐ Lightly sand the battens and panels. Where necessary finish exposed chipboard edges with a suitable veneer strip or filler. Avoid getting paint or varnish on those edges to be glued.

☐ Paint or varnish the smooth surface of the hardboard back and allow to dry.

☐ Cut 16 pieces of 6mm dowel, each 2.5cm long. Glue a dowel in each of the holes drilled in the battens.

☐ Apply white woodworking adhesive to the dowelled edges of the battens and on the protruding dowels.

☐ Assemble three sides of the box, fitting the dowels into the corresponding holes on the edge of the board (see detail in fig.1a).

☐ Slide in the back panel, smooth side facing inwards and fix final side of box.

☐ Cramp the box together using sash cramps or make your own cramps by cutting right-angle corner blocks held in place by a double loop of cord (fig.2).

☐ Check with the carpenter's square that the box is square or by measuring the diagonals—if both diagonals are equal the corners form right angles.

Partitions. Fit small screw eyes in two opposite sides of the unit (fig.3). Lay a piece of 3mm hardboard 21.8cm x 21.4cm on top to form a shelf. These partitions are optional.

Mounting

To fix to a wall, cut two 38mm x 12mm battens, 21.8cm long, from softwood.

☐ Plane or cut a 45° bevel on one long edge of each. Position as shown in fig.4 and plane flush if necessary.

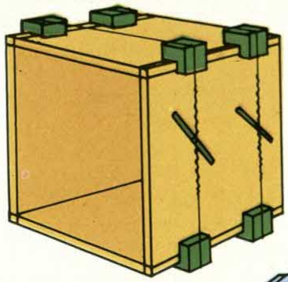
☐ Drill and countersink one batten to take two screws, 5cm from each end.

☐ Screw the batten to the wall at the desired height with two 5cm No.8 countersunk screws. Check with a spirit level that it is horizontal.

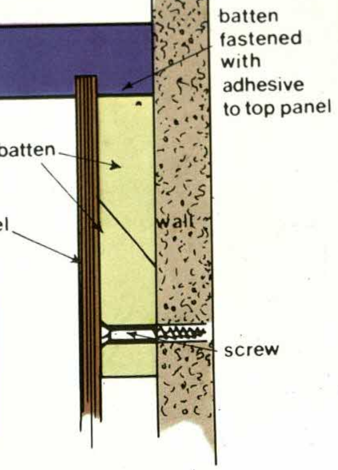
☐ Glue the other batten to the underneath of the top panel, behind the back panel. The bevel should face inwards (fig.4).

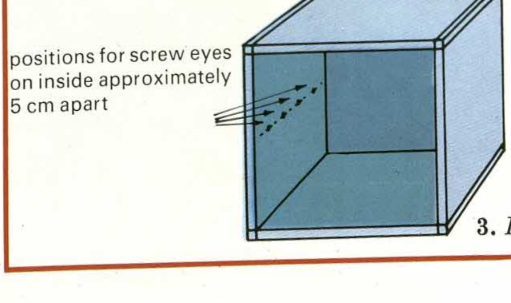
☐ The box is simply hung on the batten (see fig.4).

2. *Cramping box.*



4. *Detail of wall mounting.*





3. *Fixing partitions.*

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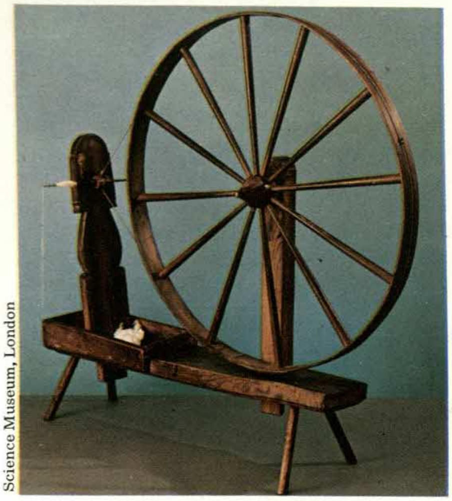
Deptt. of Extension Services.

Spinning on a spinning-wheel

If you enjoy making your own yarns for weaving, knitting or crochet on a drop spindle then a proper spinning-wheel is the next step.

The invention of the flax or long fibre wheel is generally attributed to a 16th-century German woodcarver. Prior to this invention, spinning with a spindle was the predominant mode and as this is a very intermittent process spinning was very slow. Two separate actions are involved—spinning the yarn and winding it on (see Weaving chapter 25, page 2166).

The Irish great wheel was used before the flax wheel but this was really only an extension of the spindle since the large wheel is turned by hand, which in turn drives a spindle. The spinner alternately turns the wheel and winds the spun yarn on to the bobbin.


Science Museum, London

The great wheel has no foot control.

The invention of the flax spinning-wheel made it possible to both spin and wind on simultaneously, therefore considerably increasing the speed of the whole process. The wheel is fitted with a treadle so the spinner is able to use both hands for controlling the drawing out of fibres from the rolags (rolls of prepared fleece). This means that not only is the process faster but, because both hands can control the fibres, a finer yarn can be spun.

Although spinning-wheels vary a great deal in size and form depending on the country or even district of origin, they all, with the exception of the great wheel, exhibit the same essential features—wheel with foot control, bobbin and spindle flyer where the spun yarn is wound. The real inventive genius is in the arrangement of the bobbin and spindle flyer because it is this arrangement that enables the two processes of spinning and winding on to become one.

When buying a spinning-wheel avoid the antique models which are usually of more decorative than practical value.

Raw materials

As with all crafts, the spinner should gain a good working knowledge of the raw material.

Generally, fibres are classified into different categories depending on their origin: animal hairs, such as wool, mohair, alpaca and cashmere; vegetable fibres such as cotton, linen (flax), jute and hemp; regenerated fibres such as rayon and synthetic fibres such as nylon.

All these fibres can be used by the handspinner but it is wool that is more commonly used. This is because it is probably the most commonly available and certainly the most varied in both quality and colour.

Wool. There are many different breeds of sheep due to the very great differences in environment and climate. It is therefore not surprising that sheep wool provides the weaver or knitter with a raw material that can be made into fabrics of great diversity in appearance, quality and use.

Sheep breeds are classified into three main groups. As British sheep breeds have spread all over the world, breeds of British origin are given as examples of each category.

Lustre and long breeds generally have wool which is straight fibred, strong, long, of good lustre and free from kemp (hairs). The wool is regarded as typical worsted material and is therefore appropriate for a large

Jerry Tubby

Sheep, fleece, children and the age-old process of spinning. Part of the fascination of spinning is contact with the basic raw material of wool.

range of dress and other fabrics in which durability is combined with a bright, smooth and lustrous finish.

Breeds in this category are Devon Longwool, Leicester, Lincoln, Romney Marsh (Kent), Border Leicester, Wensleydale, Dartmoor and Cotswold.

Mountain and Hill breeds. Wools from this category are liable to be much coarser and contain kemp. However, there are some exceptions such as Cheviot, Exmoor and Welsh breeds which have soft wool.

Typical of this category are Herdwick, Blackface, Swaledale, Lonk and Gritstone.

Short and Down breeds. Wools from this category of sheep tend to be short, curly, soft and fine. They are not particularly strong wools and tend to be used for light-weight dress fabrics, flannels, fine tweeds and knitting yarns. Southdown and Suffolk are the best quality.

Other breeds in this category are Hampshire, Dorset Horn, Ryeland, Shropshire, Devon Close, Kerry Hill, Oxford Down, Clun Forest, Radnor, Wiltshire and Shetland.

There are two additional classes of sheep or types of wool that are very important because they are well known and very common—the Merino and Crossbred.

Merino. The majority of fine-wooled flocks of the world have been derived directly or indirectly from the Spanish Merino breed which for centuries has been famous for the fineness and excellent quality of its wool. As this sheep responds well to a dry climate, its introduction to Australia was very important. Botany wool, which takes its name from Botany Bay where the breed was first introduced, is a term now synonymous with fineness.

Crossbred. This word is used when describing those sheep which have been evolved by crossing one breed with another in order to develop some desired characteristic or combination of characteristics. As in the case of New Zealand sheep, this is often for the benefit of good mutton production. This has an adverse effect on the quality of the wool.

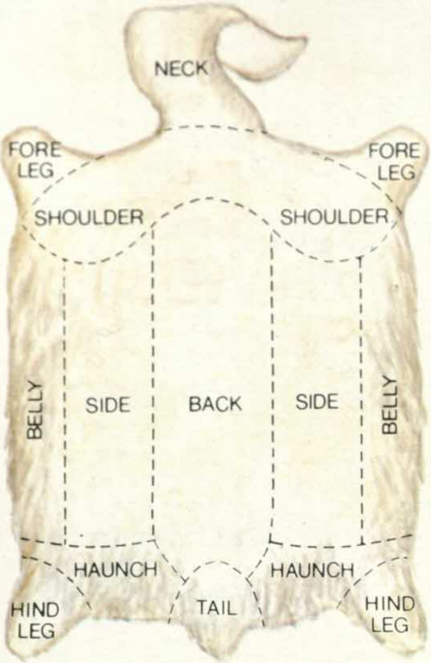
Comparing fleece. By using and comparing different wools the spinner will become acquainted with their many varying qualities. Examine stray wool which is caught on hedgerows or visit other spinners or sheep-shearing events at country shows.

Preparing the fleece

Before spinning, it is necessary to prepare the fleece by sorting, cleaning and carding.

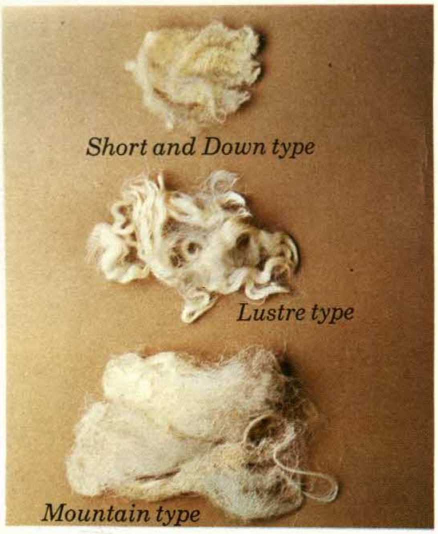
Sorting must be done if you are able to buy a whole fleece. This is the cheapest way to buy wool and is really the best way of seeing your raw material in its proper state, shaped as it is sheared off the sheep.

Sorting is the selection of wool from the various areas of the fleece into the best or most useful parts. Obviously the back, sides and shoulders are better quality than the dirtier, coarser belly and haunches (fig.1). In the case of a black and white sheep, sorting may be just separating the two colours.



Barbara Firth

1. *The different areas of a fleece.*



Teasing. Raw wool is usually extremely dirty and greasy but do not let this put you off. You can purchase wool already scoured and cleaned but handspun wool is generally best spun in the oily state. A lot of dirt from the natural fleece can be shaken out and burrs and prickles removed without much trouble. Teasing the fleece (see Weaving chapter 25, page 2166) should get rid of any dirt. It is advisable to store your fleece in an air-tight plastic bag or sack to prevent it getting dry and brittle.

Dyeing. There is really no hard and fast rule about the washing of wool before or after spinning but, of course, it must be thoroughly washed if it is to be dyed. This is because the natural oils and grease must be removed or the oil will repel the dye. This is done by washing the entire fleece using the following recipe:

Wash the wool in 45 litres (10 gallons) of warm water containing 2 litres (60fl oz) of ammonia and 1 litre (30fl oz) of liquid soap containing a water softener. Then rinse in clear warm water and leave to dry.

Dye the fleece with a cold water dye such as Dylon or use natural dyes for special soft, earthy colours.

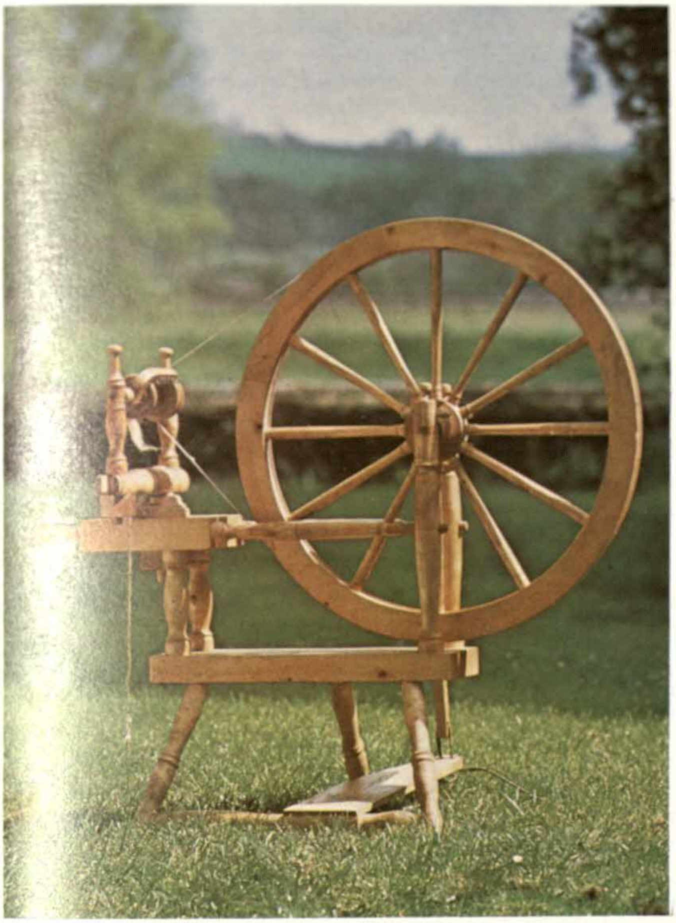
When spinning, sprinkle vegetable oil lightly on the fleece before teasing. This will replace the natural oils lost with washing.

Carding. Wool grows on the sheep in definite locks or staples. Each staple is made up of many thousands of individual fibres. To prepare the wool for spinning it is necessary first to break up the natural staples of fibres and mix them thoroughly so that they lie together in a light and fluffy regular mass. This is done first with the fingers and then with the hand carders (see Weaving chapter 25, page 2166 for full instructions on teasing and carding).

For spinning on a spinning wheel, it is important to prepare a number of rolags (rolls of carded fleece) to have ready beside you before you start.

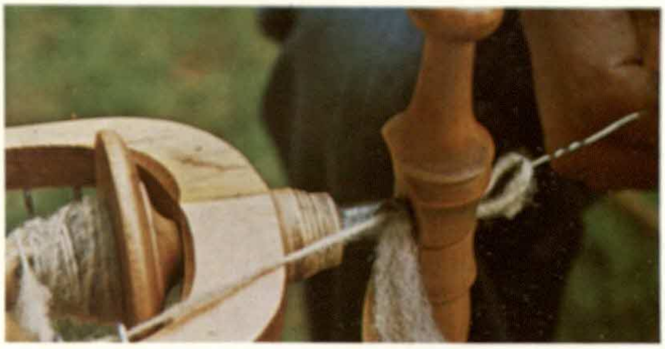
Wool comes in an extraordinary variety of colours and textures.

Steve Bicknell

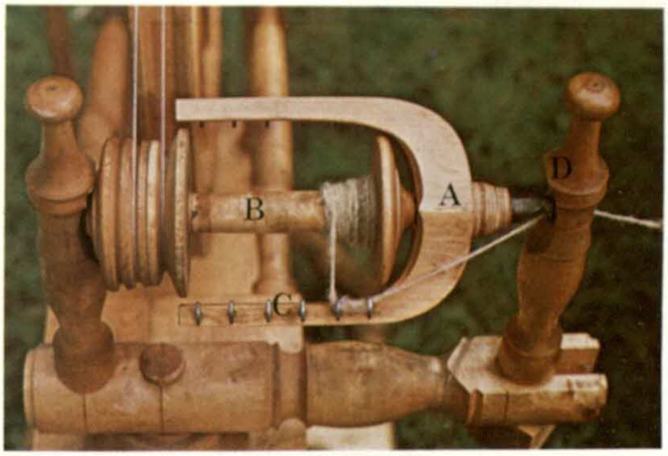


Jerry Tubby

A standard spinning-wheel with foot pedal, wheel and spindle and flyer arm.



Take yarn around hook and through hole in spindle.



A—*flyer;* **B**—*bobbin;* **C**—*hooks;* **D**—*hole in spindle.*

Spinning

When the rolags have been prepared, you are ready to start spinning. The hardest part of spinning for the first time is getting used to controlling the wheel with the foot at the same time as controlling the yarn with the hands. For those used to a pedal sewing machine, the operation should be a little easier. Before attempting to spin it is wise to practise using the wheel by sitting beside it and getting the feel of the treadle alone. Aim to get the wheel revolving relatively slowly, regularly and smoothly.

The next step is to get foot and hands working together and this, like so many other things, is really a matter of practice. Do not get frustrated at unsuccessful first attempts as even the best handspinners remember their first ghastly attempts.

The first stage in the actual spinning process is to tie a piece of strong commercial yarn to the bobbin and over one of the hecks or hooks on the flyer arm (see picture). Then with a straightened out, bent-ended hairpin (kept or tied to the spinning wheel) thread the yarn through the hole in the spindle as shown.

Now, revolve the wheel holding the yarn you have just threaded tightly in your left hand. As you revolve the wheel, the yarn will naturally want to wind on to the bobbin but hold it firmly and stop it from doing this. As you hold the yarn, the wheel will twist it just as the spindle does when twirled. By holding a rolag ready beside the yarn, the twist will transfer into the drawn out fibres from the rolag. Thus, the spinning process is started in exactly the same way as with the drop spindle with the two yarns twisting together.

While gently but firmly revolving the wheel with your foot, you should hold the twist that is forming between the finger and thumb of your left hand and gently pull and draw out the fibres from the rolag behind it with your right hand. As time and your own competence progress, these two hand movements become one automatic movement of holding the twist being formed and pulling out fibres from the rolag.

The hooks on the flyer arm are to distribute the spun yarn evenly on to the bobbin. As you build up one area, move the yarn along to the next hook so that the next area of the bobbin can be built up.

Some spinning-wheels have a twist bolt positioned underneath the spindle flyer which can be pulled towards or away from the wheel thus tightening or loosening the tension. This in turn controls how quickly or slowly the spun thread is drawn on to the bobbin.

Interesting yarns

It is very easy when spinning to produce those bumpy, obviously handspun yarns by pulling out the fibres from the rolag in uneven quantities. Aim to produce an even, medium or thin yarn as this will be the true test of your competence in controlling the wheel.

Thick, even yarns are always the hardest to spin as are long fibres as opposed to short. This is because you are dealing with many more fibres.

Colours. The spinning-wheel offers infinite design possibilities to those interested in yarns and colour. Besides varying in quality and texture, fleeces are also different in colour. Shetland sheep, for instance, produce a beautiful range of soft greys, browns and fawns and the black and white Jacob's sheep are much loved by the handspinner because of the fine natural colour of the wool. The black and white wool can be used individually or mixed together to produce shades of grey.

Alternatively, you can dye the teased fleeces before or during carding. In this way, some beautiful colour mixes can be obtained and the resulting yarn is very interesting to knit or weave.

Simple ways of displaying shells

Shellcraft 2

Shellcraft—decorating and making objects with shells—was very popular with leisured ladies of the 19th century and has recently undergone a revival. More and more people are now discovering the rewards of using these natural materials, which need cost nothing, for decorations.

Designing with shells

Every shell is intrinsically beautiful, however common the species. Shells which you have found while beachcombing will probably form the bulk of your collection, while those from other countries, which you may have bought from a shop, will add even more variety of colour and shape.

When collecting shells for decoration the most important considerations must be colour, structure (including texture) and especially the outline shape of the shell. Classify them accordingly, and also for size, and store them in glass jars for easy identification.

Shapes. You will find that most shells fall into the following categories of shape: spiral (snails such as whelks, nerites, winkles); cone- or tent-shaped (limpets, top shells); dome-shaped (cockles, which have interesting 'ribs' along them which are often an asset to a design); flattish (the smooth donax shells which have the quality of very thin porcelain, shiny abalones, and the ridged scallops); spiky (murex shells); smooth and rounded (cowries); and long and pointed (turritellas). These shapes are shown in fig.1. More information on types of shell is given in the previous chapter.

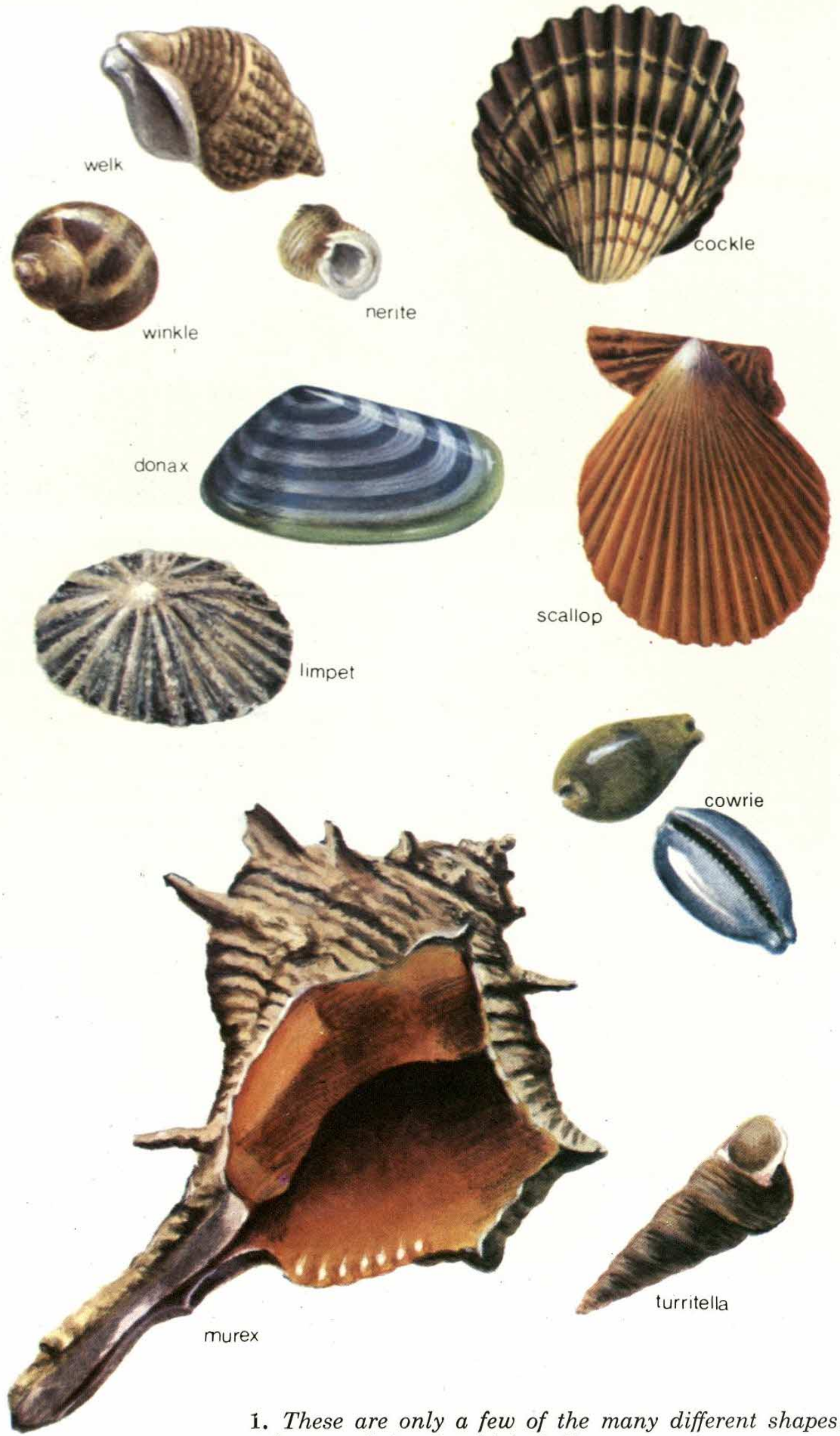
Take care when sorting bivalves (scallops, cockles) because, since their shape is mirrored in their opposite shell, confusion of the two sides can spoil a pattern. These and other flattish shells are effective when contrasted with rounded or pointed shapes in a design.

Limpets can be used either way up; their interior surface is often totally different in colour from the outside and is usually shiny.

The spiral cones of the snail are many and varied, from the tiny shells of the nerite family, which can be less than 1cm (½") long, to the giant helmet shells.

Abalone shells look very effective when broken up into chips and used for a mosaic effect. To break up abalone shells, put them into a polythene bag and crush them with a hammer. You can buy pieces of abalone for this purpose: these are cheaper than buying the whole shell.

When planning a design, choose shapes and colours which go well together. Shells can be used so that their individual beauty is emphasized,



Constance Dear

1. *These are only a few of the many different shapes, colours and sizes in which shells occur.*

or as a part of a larger design to which each shell is subordinate.

When creating a pattern covering a small area, the emphasis should be on small rather than large shells. Whatever pattern you choose you are bound to need many small shells. They are especially useful for covering curved surfaces such as around bottles and circular boxes, since large shells will not stick to curves so easily.

You will also need a great number of one type of shell. These must be as similar to one another as possible, both in size and shape.

Larger shells are more difficult to incorporate in a design but may be used when a three-dimensional collage effect or a large, central shell is required in a pattern. You will also need large shells when making a figurine or for embedding in clear plastic. This last method is often used for preserving valued objects and has an effective magnifying quality which emphasizes small details.

Clear acrylic plastic is also suitable for use as a stand to exhibit a turritella or similarly tapering shell, since it does not detract from the delicacy of the shell's shape.

Gluing and varnishing

There are various ways of fixing shells to a surface or, in the case of figurines, to one another. Clear general-purpose glue such as UHU or Bostik 1 is often successful but the type of adhesive to use usually depends on the material to which the shells are to be attached. Glass surfaces require epoxy resin adhesive such as Araldite, but since this type of glue forms a very strong bond it is very important to be accurate in your work since it is virtually impossible to correct any errors.

Where a pliable bond is required, use Oasis Fix or Blu-Tack. When making models or figurines, plasticine mixed with clear general-purpose glue is an ideal adhesive. For curved glass surfaces such as bottles or jars which are to be completely covered with shells, use a cement filler such as Polyfilla. If any gaps remain between the shells you can fill them with sand which will stick to the cement.

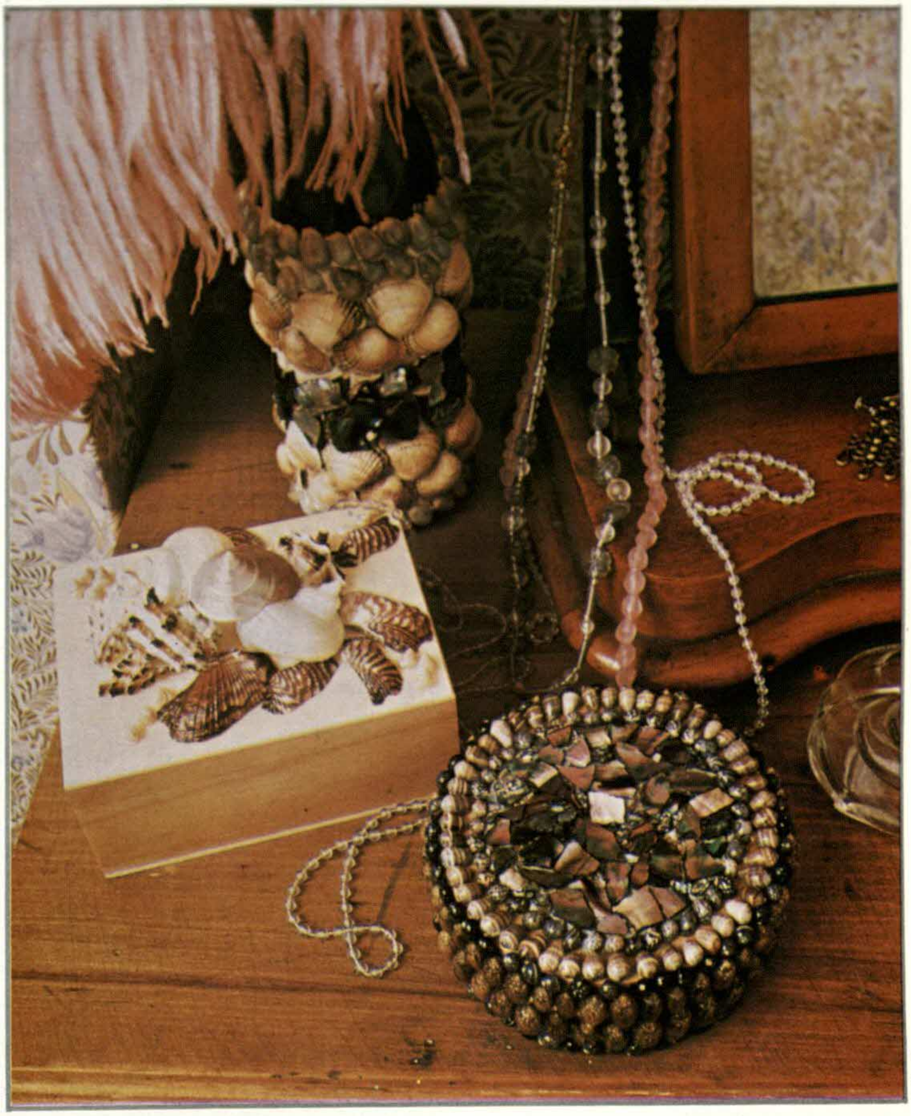
Most shells look better with a shiny surface. Two coats of clear polyurethane varnish applied to a shell will enhance its colours and make it look as if it were still sea-washed. Aerosol cans of varnish spray are suitable and are readily available. The varnish forms a protective coating which is also waterproof.

Household items

There are many household items which seem to be quite ordinary objects but which, when covered with shells, take on a quite different identity and make unusual and interesting ornaments. Old biscuit tins, bottles, coffee jars, tobacco tins, jam jars and even matchboxes are suitable objects for covering with shells.

The decoration of such objects usually requires a number of shells which are uniform in size and shape for a particular strand of the pattern. Bands of small shells in contrasting patterns and colours look best for this kind of work, with perhaps a larger shell placed in the centre or at each corner of the design.

When completely covering the flat surface of an object (such as a box) with shells in a symmetrical pattern, it is usually best to start at the centre by marking the spot and sticking the first shell there. Work from the centre towards the edge of the surface to be covered, working row by row until you reach the edge. Work in rows round the sides of the box.


Kim Sayer

Two boxes and a wine bottle are decorated with shells. By Pamela Woods.

The round box

133 nerite shells, 84 olive shells, 46 marginella shells and broken abalone chips were used to decorate the round box shown, which measures 12.5cm (5″) in diameter and 5cm (2″) high. You will also need clear general-purpose glue, a re-usable, pliable adhesive such as Bostik Blu-Tack, and a box to be decorated.

☐ Since the centre of the design of the lid of this box is filled with abalone chips which are not symmetrical, start by gluing a row of shells round the edge of the box and add as many more rows as you need until you have a space in the centre measuring about 7.5cm (3″) in diameter for the abalone chips.

☐ Cover this central space with a thin layer of Blu-Tack and embed the abalone chips in it, completely hiding the Blu-Tack.

☐ With the lid on the box so that you know where not to stick the shells, cover the sides by gluing on more rows of shells until the surface is entirely covered.

Straight-sided boxes

The straight-sided boxes illustrated

have a more three-dimensional pattern than the round box, although one has rows of tiny shells along its edges, bordering the larger shells displayed on the top and sides. The other is simply a pile of special shells on the lid, and is a good way to make use of individual shells you may have collected.

Match-boxes

An ordinary match-box can become more interesting if the lid is decorated with shells stuck to flock-paper.

☐ Cut flock-paper to fit all sides of the box except the side on which the matches are struck.

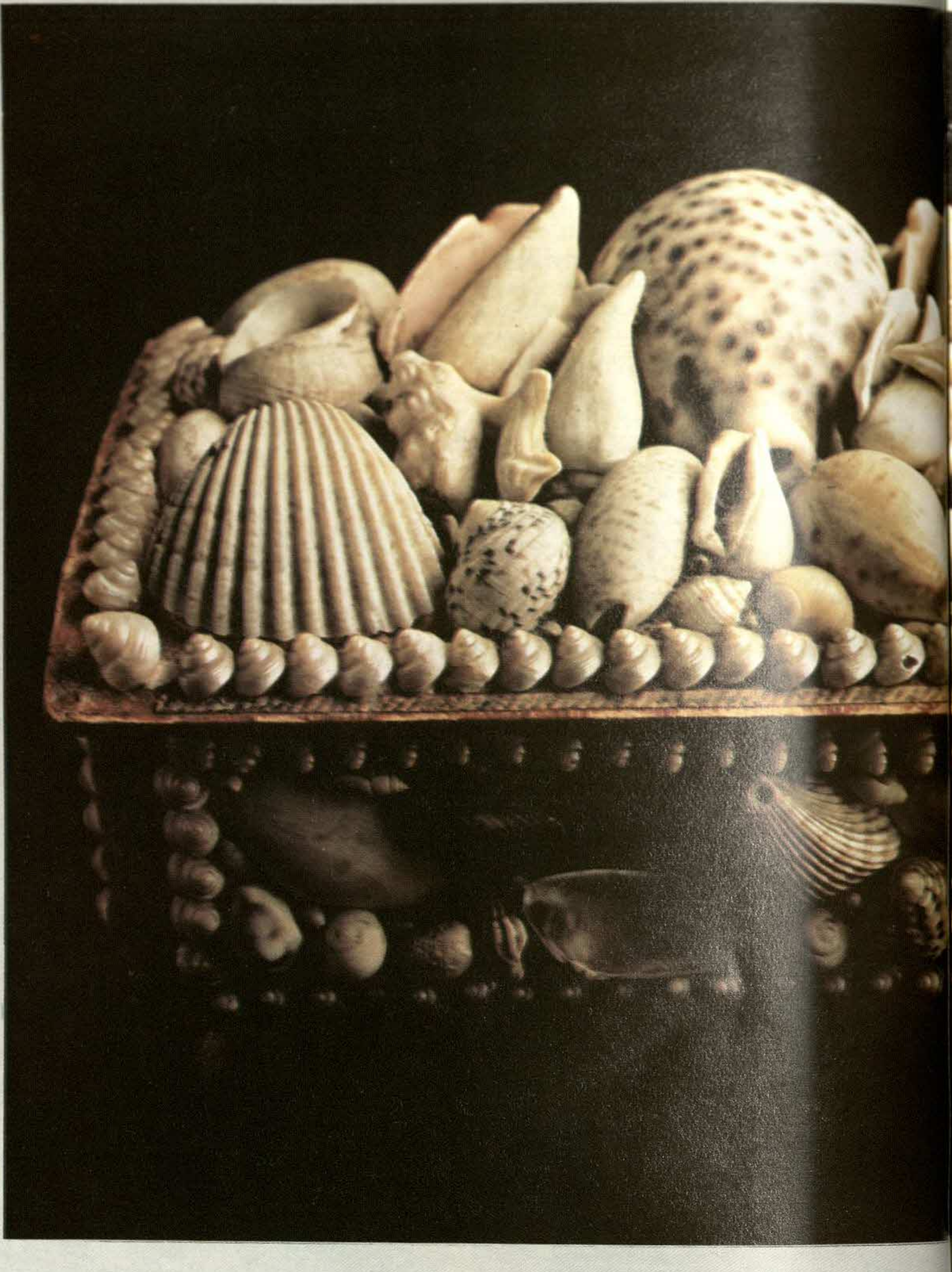
☐ Select the shells you want. Use only two or three types of shell for such a small area.

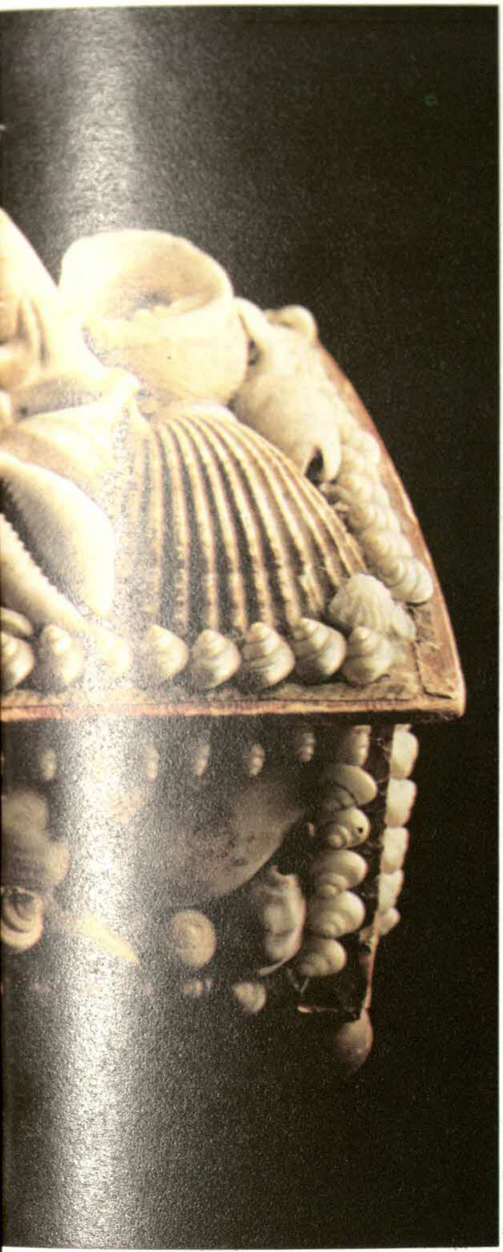
☐ Since this will be a simple design which does not cover the whole surface, mark with chalk or pen the position of the shells to ensure accuracy, then glue them in place.

Bottles

You can decorate a bottle with shells to use as a vase, lamp base or candle holder. Cover the surface of a bottle with Polyfilla and embed the shells in horizontal rows. Start by covering the base with shells, with one type of shell in each row.

Other circular objects such as ornamental glass dishes and bowls (which do not require washing) can be made more unusual with bands of small shells stuck to them, perhaps in just one row round the rim. Follow the simplicity of line of a functional object, by adding the simplest of decoration. Make sure that identical shells in a row all face the same direction.





Camera Press

Above: this box has been used for a magnificent display of various large and small shells.

Figurines

If you have collected a great number of shells, intending to create patterns needing many matching shells, you are bound to find that you have some left over which do not match any others. Use this assortment to make small animals, birds, insects and made-up characters, fixing the shells together with epoxy resin or plasticine mixed with glue. A bivalve makes a good base for a figurine; limpets make excellent skirts or hats; and tiny shells used for eyes will immediately bring a shell figurine to life.

Melvin Grey

Left: use odd, left-over shells to make amusing figurines which will delight your children. By Pamela Woods.

Decorating frames

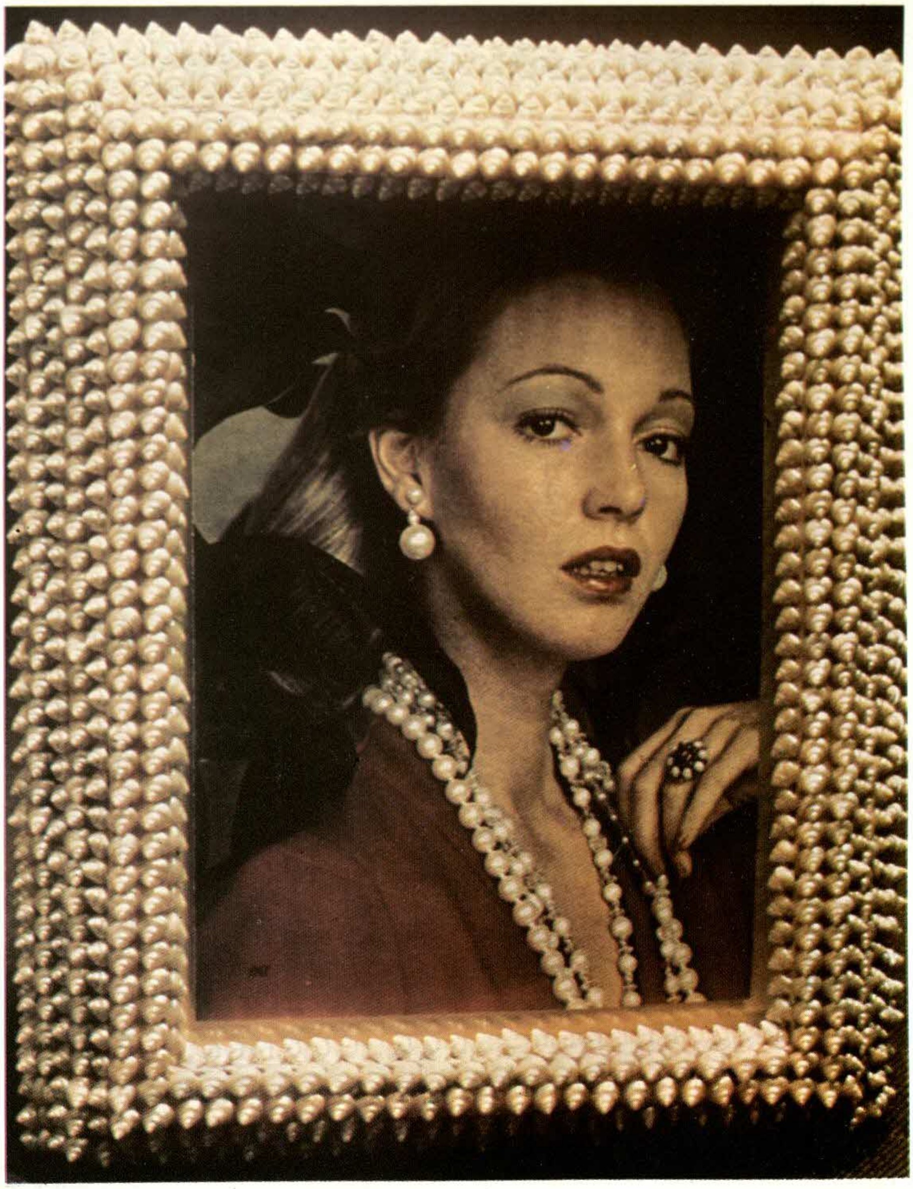
Pictures and mirrors look very attractive with their frames covered with a pattern of shells. The existing frame must be fairly simple in shape with a flat surface to which the shells can be easily stuck.

If possible, remove the picture and glass or the mirror from the frame before you start. Otherwise cover the picture or mirror with a cloth to avoid either scratching the glass or chipping the shells. Always work with the frame lying flat on a work surface covered with newspaper.

Use a cement filler such as Polyfilla, or clear general-purpose glue such as UHU, for attaching the shells to the frame. If the entire surface of the frame is to be covered with shells, apply a thin layer of adhesive at a time to a small area of the frame and embed the shells in it. If you want some gaps between the shells, mark with felt-tipped pen the position of each shell on the frame and dip one shell at a time in the Polyfilla mixture or glue so that just enough adheres to the base of the shell to allow it to stick to the frame without the adhesive showing. When your design is complete, leave the frame lying flat overnight to allow the adhesive to set.

A simple border of shells, such as several rows of pearly univalves which are all the same size, can be extremely effective. It is best to use shells of one colour when framing a picture from whose impact you do not want to detract too much. Flat shells or pieces of large shells such as abalone chips can be overlapped by sticking on the largest pieces first and smaller pieces on top of them. Use small whole shells for embellishing the basic pattern. Apply very small shells with tweezers.

A favourite photograph becomes even more striking when framed by rows of shells.



Rex Features

Herbal tonics and fresheners

Home herbalist 6

Both fresh and dried herbs can be used to make herbal skin tonics and fresheners. Stored in attractive bottles and jars they will add character, interest and colour to any bathroom.

Steve Bicknell

Recently a renewed interest has developed in natural products for skin care and treatment. Using natural herbs you can produce a variety of useful and refreshing lotions and creams and these can be made at home with very little effort. Many herbs have remarkable cleansing properties as well as the power to soothe and heal.

Old family recipe books often contain not only recipes for food but also recipes for herbal medicines, remedies and potions. Herbs were used to combat disease as well as for cosmetic purposes; each household had its own particular remedies. These old books make fascinating reading and many of the recipes can be adapted easily for use today.

Obtaining herbs. It is possible to buy, if not grow, many of the herbs mentioned at specialist herbal shops and old fashioned dispensing chemists. Half the fun of making your own cosmetics can be derived from either growing or collecting fresh herbs—many grow wild in hedgerows.

Herbal waters

The simplest way to use herbs is to make a herbal infusion, though it does not last long unless it is kept in a refrigerator. The infusion can be used to wash the face or as a skin tonic or freshener. Many kinds of herbs can be used in infusions and several are recommended for this purpose later on in the chapter.

Basic infusion recipe

You will need:

1 teaspoon dried herbs or 4 teaspoons fresh herbs.

1 cup of water.

☐ Place the herbs in a cup.

☐ Boil the water and pour it over the herbs.

☐ Leave for 20 minutes, then strain.

The resulting water can be kept in a refrigerator for up to a week.

Basic decoction recipe

Almost as simple as an infusion is a decoction. The water is used as is an infusion for skin tonics and fresheners.

You will need:

2 teaspoons dried herbs or 5 teaspoons fresh herbs.

$1\frac{1}{4}$ cups of water.

Enamel or stainless steel saucepan and lid.

☐ Place herbs and water in a saucepan and bring to the boil.

☐ Boil gently for 10 minutes.

☐ Allow to cool then strain off the liquid.

The herbal water can be kept in the refrigerator for up to a week.

Recommended herbs

Different herbs have different properties. Some are useful as cleansers, others will stimulate the circulation and remove grime and impurities from the skin.

Experiment with different recommended herbal tonics and discover which suits your skin best. There is no need to waste herbal water. If for any reason you have some left over, toss it in your bath for extra fragrance. Like synthetic cosmetics, herbal cosmetics are not miracle workers, but used regularly with a well balanced diet, your skin should benefit.

When experimenting with recipes it is

wise to restrict yourself to aromatic and culinary herbs and those recommended for use in tisanes. This is a sure way of avoiding the harsh or poisonous herbs which, although they have their uses, can be irritating to the skin.

Camomile is very soothing when splashed on a clean face.

Elder leaves or flowers make an infusion which helps fade blotches and freckles. Wash your face with the water and allow it to dry on your skin.

Fennel is a herb with healing properties. If you have the misfortune to be going through a spotty stage, fennel water used after cleansing and allowed to dry should be of help.

Lady's mantle makes a good skin tonic for a sensitive skin.

Mint is particularly good for a murky skin. It helps get rid of general grime and blackheads. If you have a sensitive skin use half the normal amount of herbs.

Nettles give your skin a refreshing tingle and are good for a tired skin.

Parsley makes a good eye wash. It should make tired and bloodshot eyes crystal-clear again.

Rosemary brightens up a sagging, lifeless skin when applied after cleansing.

Thyme is good for acne and pimples. Cleanse your skin. Then with a pad of cotton wool wash your face with the thyme water, allowing it to dry on your face.

Yarrow makes a good astringent for greasy skin. Cleanse as usual, then splash on the yarrow and allow to dry.

Herbal baths

All herbs traditionally used in baths are reputed to have particular qualities: some are said to improve the skin texture, others will relieve aches and pains. It is often suggested that it is not the herbs that relax the muscles, simply the hot water. Aching muscles do benefit from long hot baths so anything added which will make the bath extra pleasant is an advantage.

Bath bag

The simplest way to have a herbal bath is to make a simple muslin bag and fill it with the herbs of your choice (see recommended list later in chapter). Never throw a handful of herbs directly into the bath or you will have to spend hours trying to clean it out and the waste pipe may become blocked.

An easy-to-make re-usable bag can be made. Take a square of muslin, about 20cm (8").square. Fill the centre with a pile of herbs. Take up the corners and tie together firmly with ribbon, or string (fig.1). Place the bag in the bath and pour very hot or boiling water over it. Fill up the bath and use the herbal bag to scrub yourself once you have relaxed in the bath.

Barbara Firth

1. *Fill the muslin square with herbs.*

If you wring out the bag and keep it in an air-tight jar you should be able to use it two or three times.

When the herbs have been exhausted, untie the bag, throw them away, rinse out the muslin and you are ready to refill it with herbs.

Herb bath bags make attractive gifts. Make up a mixture of dried herbs in an attractive box and enclose a muslin square and ribbon.

Herbs to fill your bag

You can make up your own recipes for herbal baths, according to taste and availability of herbs. Use fresh leaves if they are available and bruise them before tying them into the bag. Dried herbs will suffice.

Any of the aromatic herbs are suitable, lavender and lemon verbena are particularly pleasant.

Try combinations of fragrant herbs and those reputed to have particular qualities.

Agrimony and **mugwort** are both recommended for aching muscles, and **camomile** for its soothing qualities. Make up a bag using equal parts of all three.

Lovage is said to have deodorant qualities and also to increase 'loveability'. Possibly the two were not unconnected in times when bathing was infrequent. **Lovage** does not keep well so it is best to use fresh leaves.

Prolonged immersion in water containing **comfrey** is said to rejuvenate the skin. **Rosemary** too, is supposed to restore youthfulness.

For comforting fumes, if you have a cold, try a mixture of **rosemary** and **eucalyptus** leaves. For an invigorating morning bath, try **southernwood** which has a pleasant lemony smell. At one time **southernwood** used to be carried into church because of its reputed ability to keep people awake during the sermon. For a soporific evening bath, try **valerian** and **camomile.**

Add **soapwort** to any herbal bath bag to give the water a gentle, cleansing effect. Try a mixture of **soapwort** and **lovage** for a naturally cleansing and deodorizing bath.

Steve Bicknell

The appeal of herbs in a bath are further increased when herbs are used in a bath bag with which to scrub yourself.

Paper straw corn dollies

A good way to learn how to make corn dollies is to practise first with paper straws. These are more readily available from craft shops than are wheat straws and the weaving technique is very similar to that used in corn dolly weaving. Paper straws have added advantages in that they can be glued or threaded together and they can be coloured, thus extending the range of decorative objects it is possible to produce with them.

Drinking straws can also be used but because they are waxed they cannot be coloured or glued. Paper straws are available in two sizes; the standard size being similar to a drinking straw and the other size being slightly larger.

Colours

Several types of colour can be used for decorating paper straws.

Powder or poster colours are best applied to the finished object as the dry paint rubs off during the handling. Paint them as thickly as possible, so that the straws will not become soggy and unmanageable.

Aerosol paints, though more expensive, give a good all-over colour and help to make the finished model firmer. They also dry quickly.

Cold water dyes are an economical way to colour both finished objects and individual straws, but dip quickly to prevent the water softening the paper, then drain on newspaper. Handle wet objects with care to prevent them losing their shape.

Use dyes according to the manufacturer's instructions but with half the recommended quantity of water. Test dip straws in the dye before embarking on a project to ensure the right colour.

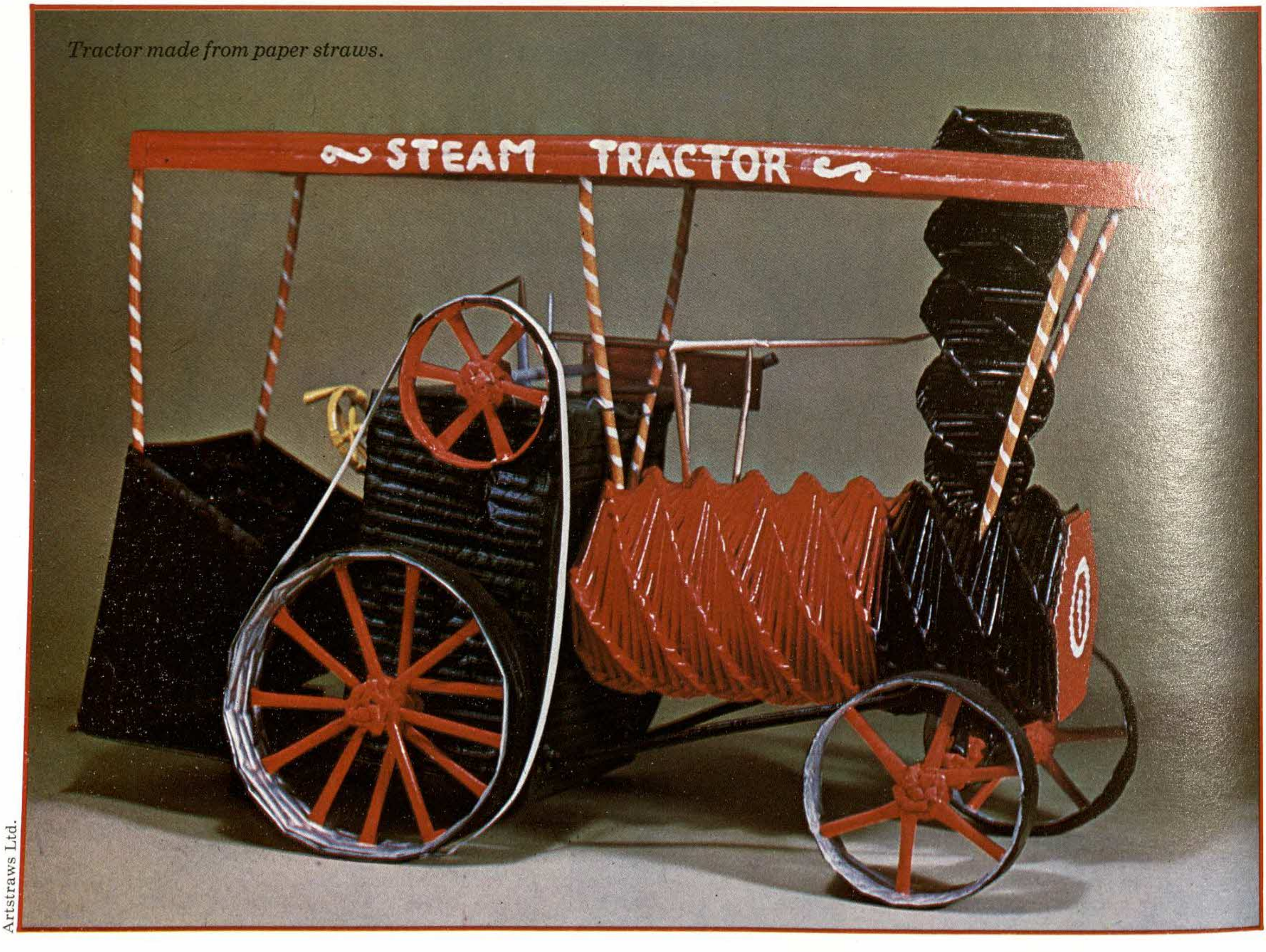
Wood stains can also be used. Colours are not limited to shades generally associated with timber. In powder form, the stains can be mixed with either water or methylated spirit. Again, test dye before starting work.

Inks can be used for bright, fast colours and also for colouring individual straws before working with them, as they do not rub off in handling.

Joining

Both wheat and paper straws are plaited and woven the same way, but the joining methods are slightly different. Wheat tapers slightly along its length, so the smaller end is pushed into the hollow larger end of another straw, but paper straws all have the same diameter so cannot be joined like this.

To join paper straws, run your fingernail lengthways along the end of the straw that is to fit inside the other


Tractor made from paper straws.

Artstraws Ltd.

straw and score it about 6mm (¼"). Squeeze the end lightly so that the indentation makes a heart shape on the cross-section. Push this end into the other straw as far as it will go without denting or creasing either of the two straws (fig.1). This makes a strong join.

Another method is to cut a slit 2cm (¾") down the length of the straw, squeeze the straw lightly so that the cut edges overlap, then push this end into the end of another straw (fig.2). Wheat straws of the same diameter are also joined together like this.

Try to join straws at a place where they will not have to be folded as it is difficult to bend a double thickness of straw. Bulky folds spoil the regularity of the weave.

Weaving

You can weave with any number of straws from four upwards. Two and three straws cannot be woven but can be plaited to make braids which were traditionally known as 'favours' and worn in the buttonhole. Braiding is simply the twisting together of straws of the same thickness.

To make a two-straw braid, tie two straws firmly together at the top, hold them in the left hand at the knot and fold the first straw over the second to form a right angle (fig.3a). Fold the second straw up and over to lie across the first straw at right angles. Continue like this until you have the length you want (fig.3b).

Using more than two straws. The shape of the objects being woven depends greatly on the number of straws used. Four straws, for example, produce a triangle in cross-section (fig.4), while five straws make a square (fig.5). The more straws you weave with, the rounder the shape will become and the firmer the finished object will be.

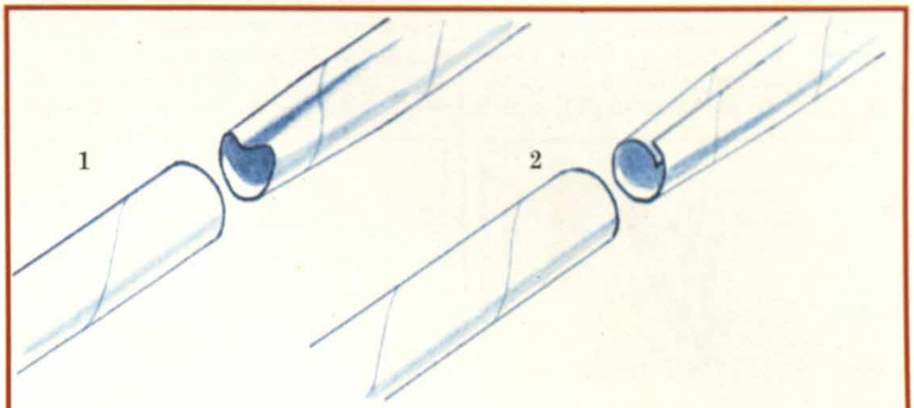
The five-straw weave is the basic weaving process for both corn dollies and paper straws. Once this has been mastered, it is fairly easy to tackle any number of straws up to about ten or twelve.

Weaving round a central core or 'former' is the easiest way to work because the former helps to shape the weaving as its grows. After this, you can progress to free weaving, working without a former.

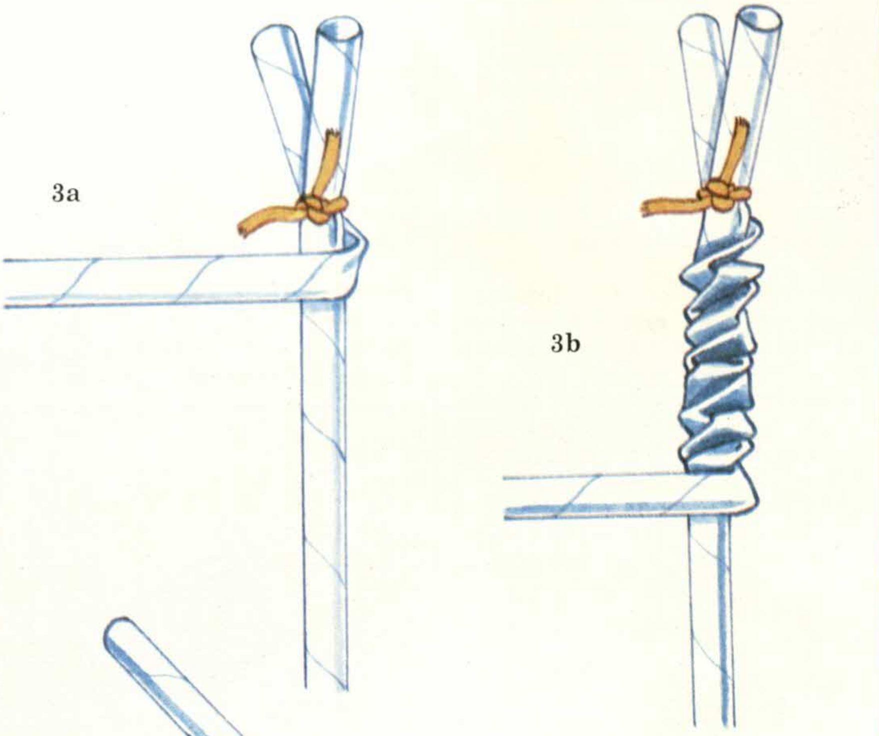
Five-straw weave

☐ Tie the five straws together tightly about 2.5cm (1") from one end and again about half way along the length of the straws. The distance between ties makes the former. (When working a free weave, omit the second tie.)

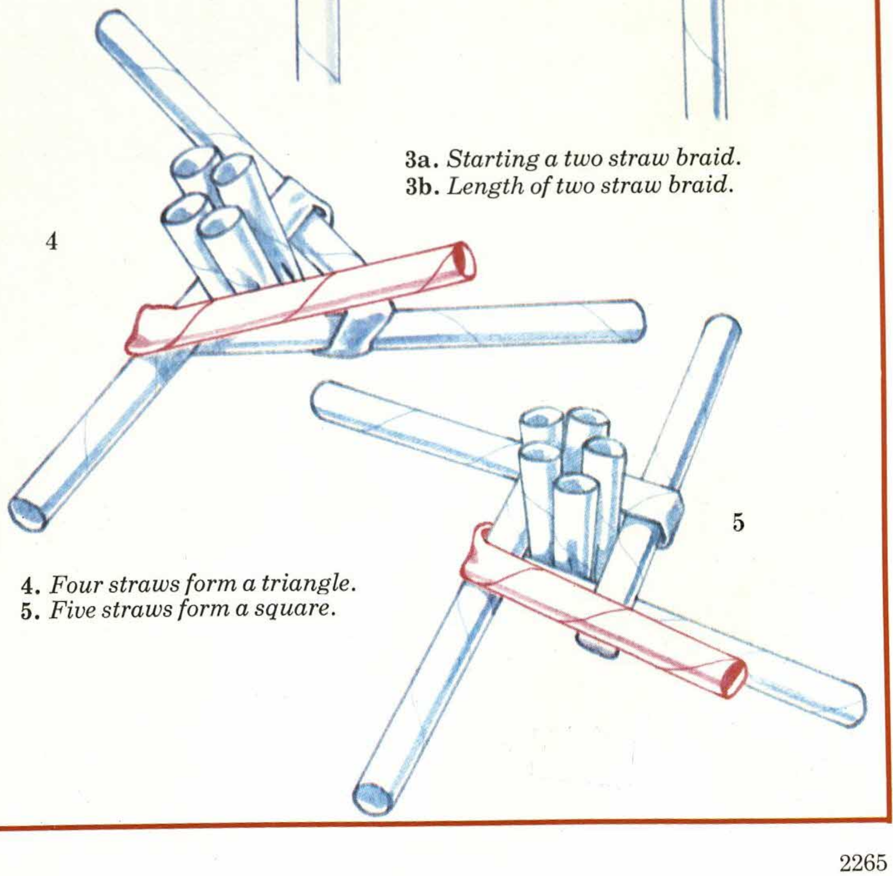
☐ Hold the straws in your left hand with the fastened ends upwards, forming the core.



1, 2. *Two ways of joining paper straws.*



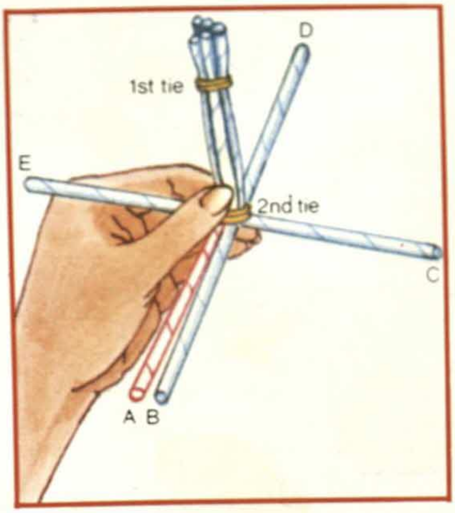
3a. *Starting a two straw braid.*
3b. *Length of two straw braid.*



4. *Four straws form a triangle.*
5. *Five straws form a square.*

Coral Mula

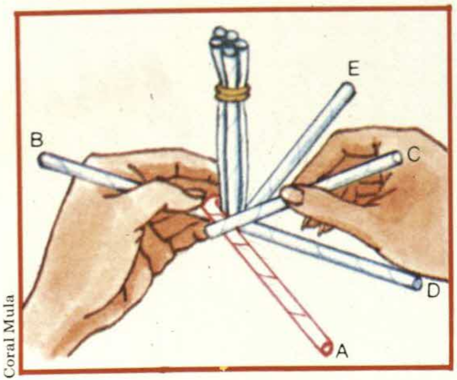
☐ Fan out the straws below the second tie so that they make a square. Three corners have one straw each and the fourth corner has two (fig.6), which will be nearest to you. Bend the straw nearest you (A) and lay it anti-clockwise over the next two straws, close to the central former.



6. *Starting a five-straw weave.*

☐ Move the work clockwise so that the last straw you went over (C) is nearest to you. Hold the work lightly, trying not to flatten the straws.

☐ Take straw C up and over straws A and D (fig.7), again holding it against the central former.



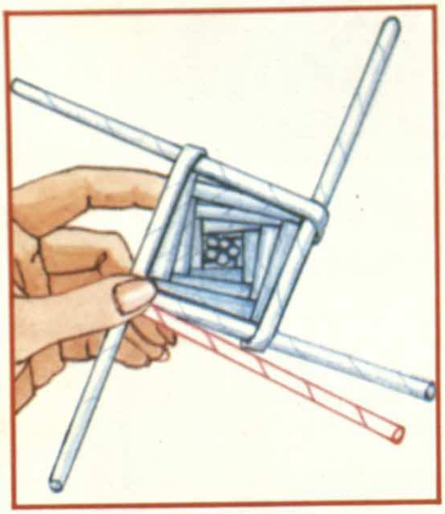
Coral Mula

7. *Working around the former.*

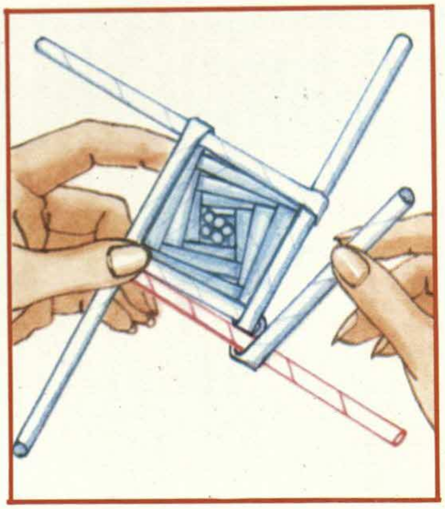
☐ Continue like this always taking the last straw you passed over and moving it anti-clockwise over the next two straws to produce a spiral. Remember always, to turn the work towards you in a clockwise direction each time you move a straw. The neatness of the work as it builds up round the former depends on the regular folds of the working straws.

Shaping is controlled by laying the straws in certain positions. To keep a straight shape, each straw must be placed exactly over the straws which are underneath it.

To increase the width, take the straw over the next two in the usual way but lay it slightly outside the straws underneath (fig.8). Pull the next straw back under the overlying one, take it over and position it alongside the next straw (fig.9). Continue like this until you have the right size.



8. *First step to increase width.*

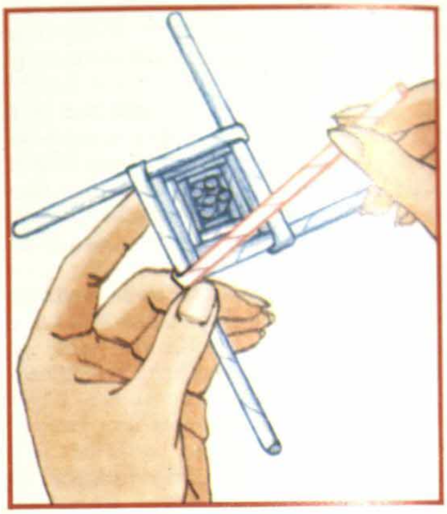


9. *Second step to increase width.*

To decrease the width lay the straw slightly inside one underneath (fig.10). Obviously, when working round a former, you cannot decrease width, so this applies only after increasing or in free weaving. Do not try to hurry the shaping process or it will spoil the finished result.

To finish off, tuck the ends of the straw into the weave. Glue is used on paper straws only when making pictures or collages or assembling woven pieces to complete an object. Use a quick-drying, clear adhesive so that the straws can be held in place while they dry.

Thread or thin wire may be used to tie straws together and is especially useful when making mobiles. Pass thread or thin wire through the straws with a sewing needle.



10. *Decreasing the width.*

Paper straw mice

These delightful little mice are made by free weaving without a central former. The largest mouse is about 10cm (4″) long excluding the tail.

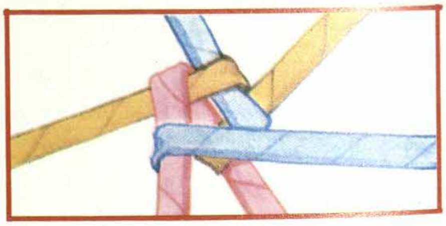
The mice illustrated have been left white, but they can be coloured in various ways if you prefer.

Start a six-straw flat base weave without a former by taking three straws and placing them one on top of the other in a star shape.

Weave, but without a former, moving each straw over the next two (fig.11).

Increase as soon as you can to make the fat part of the mouse, then gradually decrease, ending by tying the six straws together with white cotton and trimming to a point for the nose.

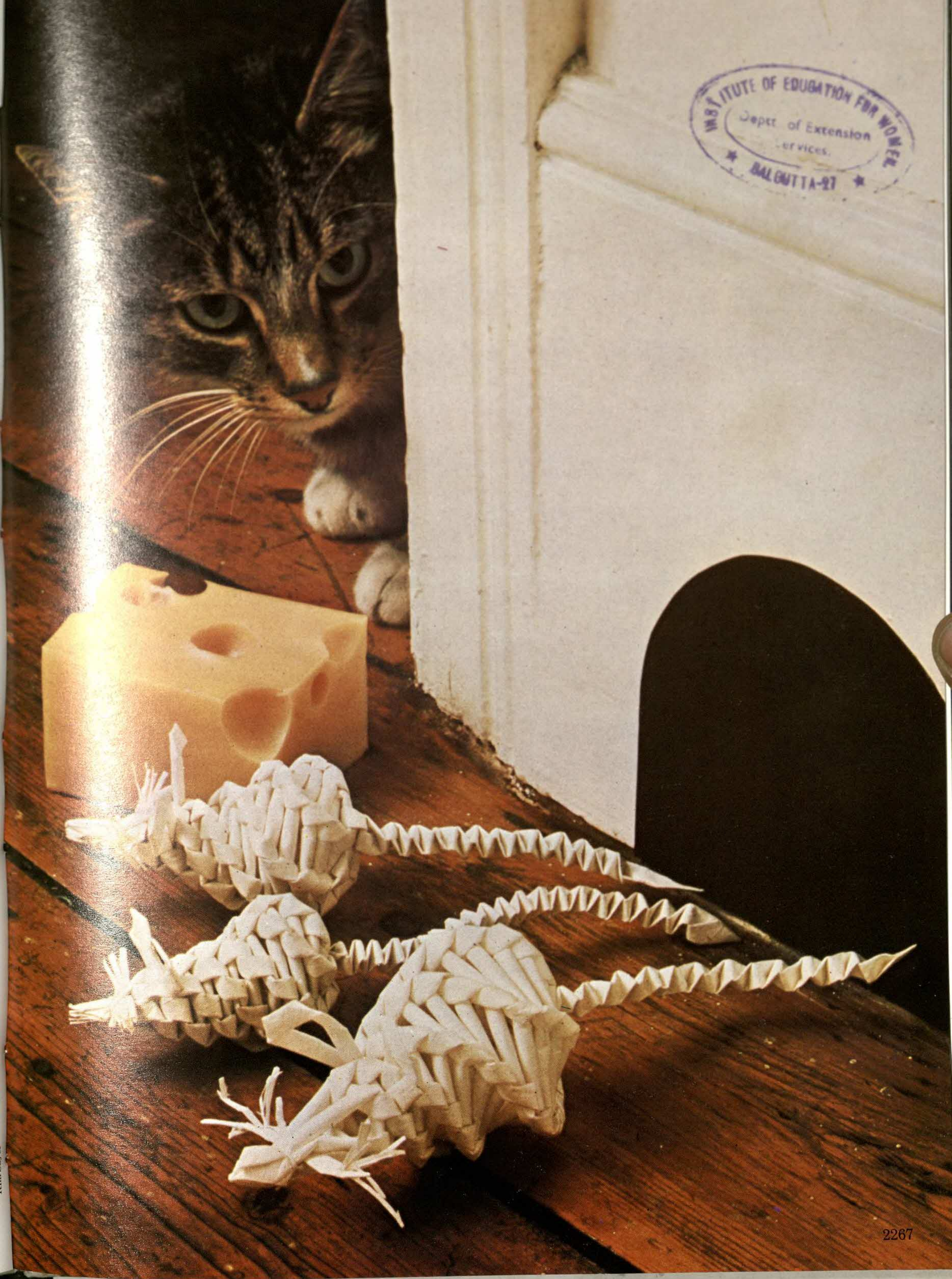
For the tail, insert a flattened straw through the base weave. Use the two halves to make a two straw braid. Glue the two ends together and cut to a point. Two pieces of flattened straws are stuck in place for the ears and another piece, fringed at both ends, is stuck in for whiskers.



11. *Six straw weave.*

Three white mice for the cat's delight. They are made from paper straws using corn dolly weaving techniques. Designed by Anne Stone.

Kim Sayer



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Introduction to oil paint

Design know-how 79

The colours or pigments used to make oil-based paints are the same as those used for water-based paints. It is the medium used to bind the pigment together that determines the type of paint.

Artist's oil paint

To make artist's oil paint, pigments are mixed with either linseed oil or poppy oil. When you buy a tube of oil paint, what it contains, in fact, is a mixture of the pigment and one of these two oils.

Pigments are obtained from organic sources—vegetable or animal, or from inorganic chemical compounds. These pigments are used alone or blended to make a wide range of colours.

Permanence. Some pigments will last longer than others. The most permanent of all the pigments are the earth pigments—those obtained literally from the soil—such as yellow ochre; raw sienna; raw umber; terre verte (green earth); vandyke brown; light red, indian red; burnt sienna and burnt umber. The permanency of the other pigments varies but information regarding permanence can be obtained from manufacturers.

Colour change. A variety of factors can cause colour changes.

The medium used to bind the colours together can cause a colour change. Some oils used to bind pigments go yellow with age. This yellowing causes certain pigments to change colour. Chrome yellow for example tends to go green.

Light can cause a reaction in some pigments such as sepia, madder and carmine, causing the colour to fade or grow darker.

Chemicals in the atmosphere can react with some pigments to change their colour. Sulphur will affect the metallic-based pigments such as lead white. Mixing some pigments with others will cause a chemical reaction. A sulphurous pigment such as vermilion mixed with a lead-based, copper-based or iron-based pigment will cause the paint to go black.

Whites. When choosing your colours you may wonder why there are so many different whites. The reason is that manufacturers have developed a number of white pigments which have different qualities.

White lead is made from carbonate of lead and is the most popular of the whites with most painters. It is an extremely opaque, quick-drying and durable paint. It is also poisonous and should be used carefully.

Flake white is similar to lead white but a small amount of zinc oxide is added to improve the consistency and whiteness of the paint.

White lead paste is the same pigment as white lead, but it is mixed into a very thick paste bought from builder's merchants by weight rather than by the tube. It has a slightly silvery look to it due to impurities and is much cheaper than the white lead in tubes. It should be stored in a jar of water to prevent it drying out.

Zinc white is made by burning metallic zinc. It is not poisonous, less opaque than white lead and produces a slightly crumbly paint.

Using oil paint. Some artists grind and mix their own pigments to the required consistency for use. Most people however buy tubes of already ground and mixed oil paint. This paint is not used straight from the tube, in fact the consistency of the paint in the tube varies from one colour to another. The paint should be mixed with a medium before being used. This is not simply a matter of diluting the paint with turpentine—the purpose of using a medium is to extend the paint, alter its consistency, or accelerate the drying time.

The most commonly used medium is 60% oil to 40% turpentine, but this mixture does have its disadvantages. For example, using this medium to make a translucent paint results in a very liquid mixture that is difficult to control. This medium also takes a very long time to dry.

A number of other mediums are available which make it possible to extend the paint, accelerate the drying time, or mix up semi-transparent paint while maintaining a fairly thick, manageable consistency.

These mediums contain oil, varnish and turpentine in various different ratios to create different consistencies. Mediums which contain beeswax give oil paint a matt finish. Any art shop which sells oil paint will also sell a selection of these mediums.

Surfaces. Oil paintings are traditionally done on canvas, but many other surfaces—wood, hardboard, cardboard, paper—can also be used provided they are properly prepared to receive the paint.

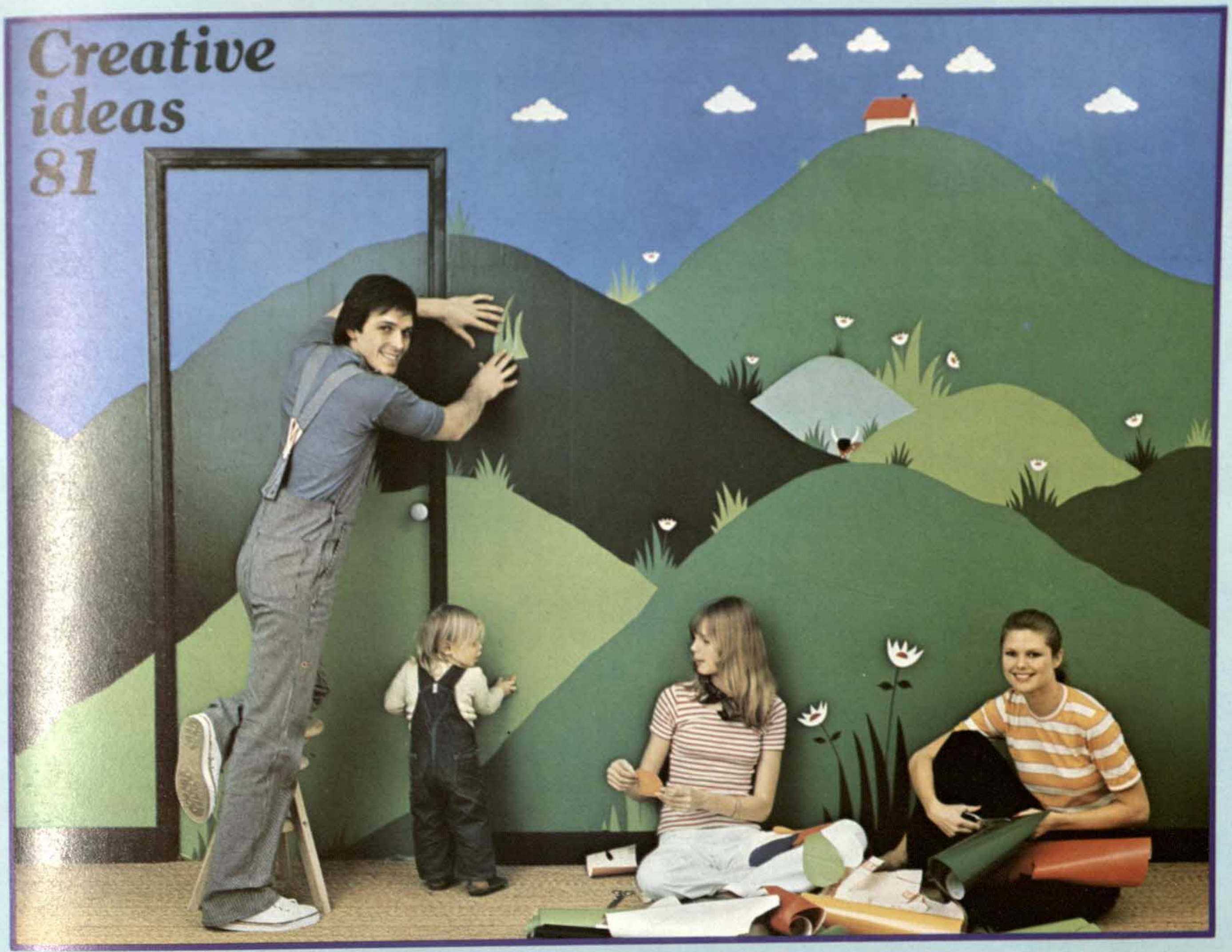
Canvas, wood, plywood and cardboard are first painted with a coat of size (a weak glue such as Polycell) to seal them. The surface is then primed. The primer must be an oil-based paint such as the white lead mentioned earlier, or any good quality lead-based undercoat normally used for interior decorating. Paper must be mounted on to wood or board before being sized and primed. Hardboard does not need sizing if the shiny side is used—a coat of primer will do.

An alternative to canvas is to stretch a thin fabric such as muslin over hardboard and size and prime as usual. This combines the durable qualities of hardboard with the pleasant textured surface of woven fabric.

Oil painting is something that takes years to learn adequately. If you are interested in learning about it, it is worth buying one of the many excellent books that have been written on the subject.

Paul Kemp

Creative ideas 81



Enjoy continual blue skies, rolling hills, tufts of grass and flowers.

Paper wall mural

Self-adhesive paper shapes, applied to a clean, empty wall can create a panoramic view indoors. Although the paper is not washable, you can, in time, remove the odd mark with a slightly damp cloth. If any bubbling does occur, simply smooth paper down again.

Self-adhesive paper is available from art supply shops.

You will need:

Self-adhesive paper in suitable colours.

Scissors.

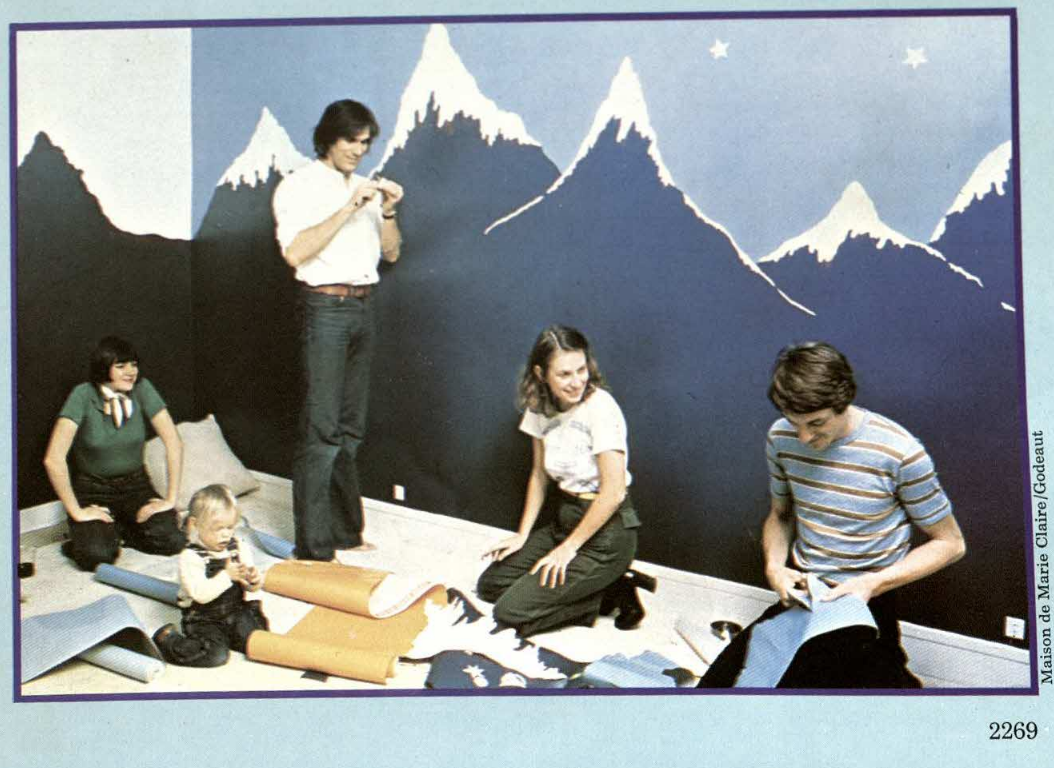
Crayons.

Lightly crayon your design on to the wall and indicate the areas of different colouring. As an alternative to snow-capped mountains choose a landscape or the sea as your theme.

From the paper cut out the shapes in appropriate colours, as planned.

Detach protective backing and stick shapes to the wall.

Keep adding paper details until you are satisfied with the results.



Find yourself in the midst of snow-peaks in your home.

Maison de Marie Claire/Godeaut

Clay 51

Slip-casting simple shapes

Nelson Hargreaves

1. *Casting a plate in a bought mould.*

Clay chapter 47, page 2162, describes how to cast a doll's head. The same slip-casting technique can be used to make purely practical items such as bowls, mugs, jugs, jars and plates which can then be decorated and glazed as you choose.

This is the mass production technique used to manufacture household crockery, figurines and models, so that sets of identical items can be produced.

The basic principle of slip-casting is that a liquid clay solution, the slip, is poured into a plaster mould. A plastic layer of clay forms against the porous plaster as the plaster absorbs moisture from the slip. When the required thickness is achieved, the remainder of the slip is poured off, leaving a hollow cast.

Ready-made moulds

Ready-made moulds are available from pottery suppliers. The one-piece, drop-out mould is the simplest type because it releases the cast without having to be taken to pieces.

Various simple articles can be made quite quickly from bought moulds; for instance, a plate (fig.1). When the clay has set, all you have to do is tidy up the foot ring with a modelling tool and then fire and glaze the piece as usual.

The one-piece mould

The model. The mould is made from a model and it is the degree of complexity of the model which determines in how many pieces the mould must be made. In Clay chapter 47, the model for the two-piece mould was of clay, but could equally well have been of wood or some other rigid material. However, when making a one-piece mould the model should be of plastic, polythene, or some other flexible material so that it can be released from the mould easily.

Choose a simple article that you would like to reproduce. There are two essential points to bear in mind: the model must not have any undercuts, which would prevent it from being released from the mould; the opening must be the widest point and the base the narrowest, so that the cast will fall out of the mould when it is tipped upside down.

Think of a child's beach bucket and of how easily the bucket, with its wide top and narrow base, releases a perfect sandcastle. An ordinary plastic flowerpot is ideal in shape and texture for a first mould.

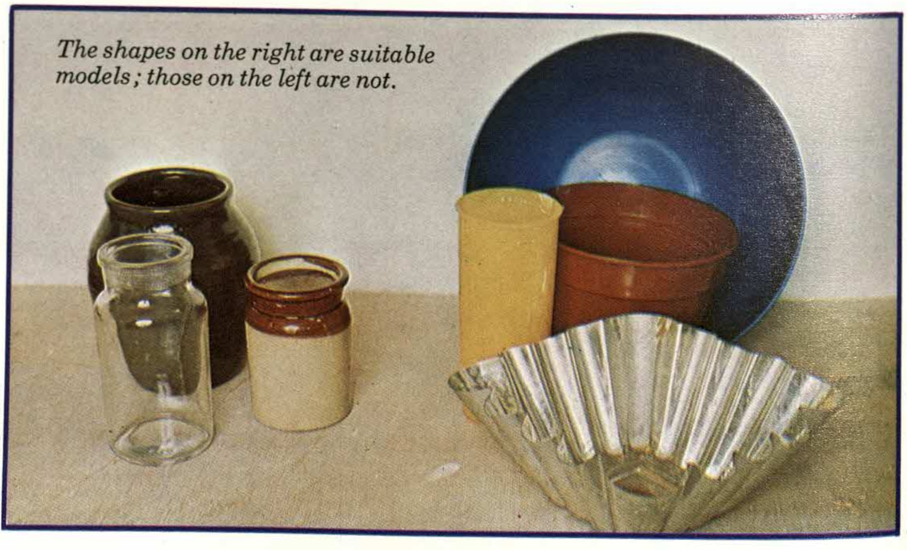
You will need:

The model (a plastic flowerpot).
Plaster of Paris.
Ordinary slip and a paintbrush.
Soft soap.
1kg (2lb) of plastic clay.
Sharp knife.
Rolling pin and 5cm (2″) guide rod.
A linoleum strip, which should be about twice as long as the circumference of the model and slightly wider than its height.
String.
Two fine tools for lifting model clear of mould.
Wire tool.
Flat metal tool and hammer.
Suitable work surface (porous surfaces must be smeared with soft soap).

☐ Roll out sufficient plastic clay, to a thickness of about 5cm (2″), to enable you to cut out a disc 5cm (2″) larger all round than the radius of the rim of the model. Use the model as a guide.

This disc will form the base on to which the plaster will be poured, so coat it with soft soap or slip clay.

Right: simple slip-cast plates and flowerpots designed by Susan Pascoe.


The shapes on the right are suitable models; those on the left are not.

Nelson Hargreaves

Paul Kemp

☐ Fill the flowerpot with clay, right to the top, so that it forms a flat surface flush with the rim.

☐ Turn the flowerpot upside down and centre it on the disc of clay (fig.2).

☐ Enclose the whole thing in a wall of linoleum (fig.3). Because the base disc is larger than the model, this will automatically leave a space of about 5cm (2″) between linoleum and model.

☐ Tie string around the lino wall to hold it in place. Do not pull the string so tight that it distorts the linoleum. Instead, moisten the string when it is in place and it will shrink firmly around the lino.

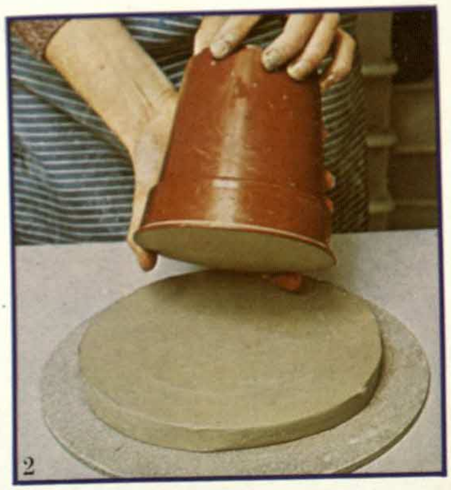
☐ Use damp clay to seal the base join, inside and outside, exactly as described in Clay chapter 47.

☐ Mix the plaster and pour it on to the model until the model is completely covered, to a depth of about 5cm (2″).

☐ When the plaster is sufficiently dry, in about 20 minutes, gently remove the linoleum.

☐ Turn the plaster cast the right way up, with the flowerpot full of clay still in place.

☐ Use a wire tool to make four key notches in the rim of the cast (fig.4).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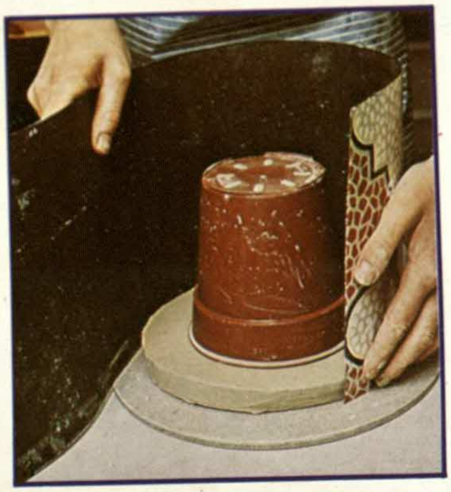

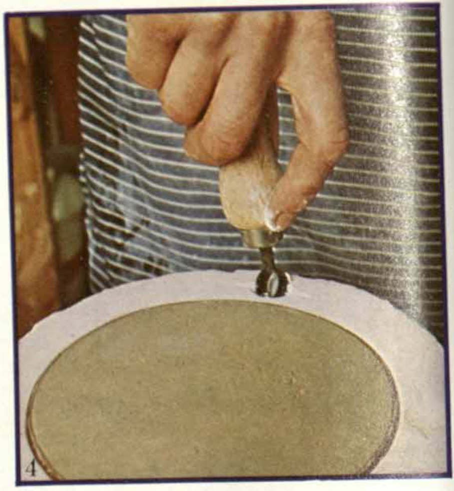
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The spare must now be made.
This is a ring which fits into the key notches on top of the mould. Eventually it forms a reservoir for the casting slip which shrinks as it dries.

☐ Roll out some clay to a thickness of about 5cm (2″).

☐ Cut out a disc about 1.2cm (½″) wider than the diameter of the top of the model.

☐ Tie the strip of linoleum tightly around this disc, as before, and seal the base with clay.

☐ Pour some plaster into the linoleum 'container' to a depth of 5cm (2″).

☐ When the plaster is sufficiently dry remove the linoleum wall.

You have made a straight-walled disc shape of plaster, and the sides of this plaster disc must now be tapered inwards so that the narrower part is about 6mm (¼″) smaller than the top opening of the mould and the wider part about 1.2cm (½″) larger.

☐ Shape the disc with a sharp knife and a Surform tool; turning it, if you have a wheel, or shaping by hand if you do not.

☐ Position the disc centrally on the top of the mould, narrow end downwards.

☐ Coat the rim of the mould and the sides of the disc with slip (fig.5).

☐ Build a linoleum wall around the whole thing, as before, so that its edges are higher than the disc.

☐ Pour in some plaster between the linoleum walls and the disc, leaving the disc just protruding above the surface of the plaster (fig.6).

☐ When the plaster has dried, remove the linoleum as before.

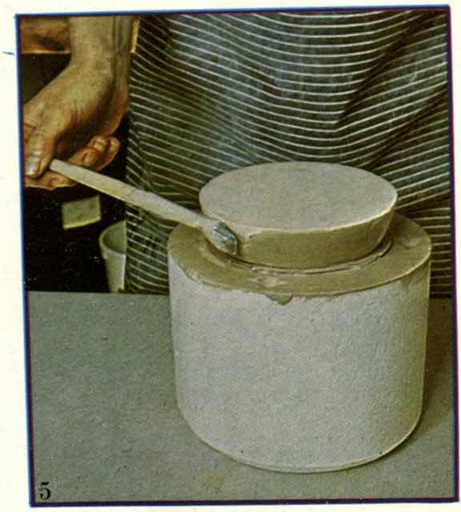
☐ Allow the mould to dry out for a little longer, about 20 or 30 minutes.

☐ Using a flat metal tool as a chisel, insert it at intervals in the join between the top and bottom parts of the mould and tap it with a hammer. Continue until you can part the two pieces.

☐ Remove the disc centre of the spare (fig.7) and discard it. This disc was created in order to form the ring, known as 'the spare'.

☐ Remove the model from the centre of the mould by inserting two fine tools opposite each other under its rim. Lever the model out of the mould.

☐ Place the ring on top of the mould and leave the whole mould to dry for at least a week before use.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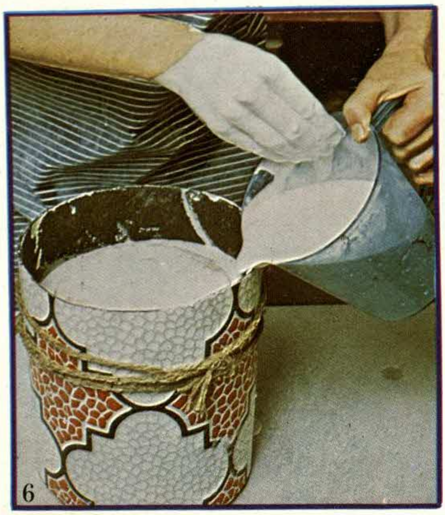
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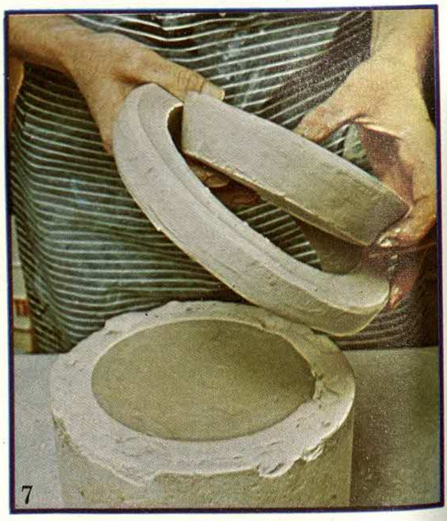
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Casting slip

The slip used for casting can be either earthenware, stoneware or porcelain—earthenware being the easiest to handle. Although you can use ready-mixed slip, as suggested in Clay chapter 47, you can also mix your own, which is considerably cheaper. Mixing slip is not difficult, but careful measuring is essential.

Casting slip can be prepared from plastic clay, but dry clay powders are recommended because they can be prepared more easily and without the aid of an electric mixer.

The slip solution contains a deflocculent as well as clay and water. This deflocculent is a very important ingredient because it increases fluidity, thus decreasing the amount of water needed to produce the required consistency. The advantage of its use is that shrinkage is reduced and a much stronger cast produced.

The deflocculent is usually a mixture of equal quantities of soda ash and sodium silicate, although this varies with the type of clay being used. It should be bought at the same time as the powder clay so that your pottery supplier can recommend the correct one.

Recipes for casting slips vary with the type of clay used, so ask for the correct recipe from your supplier.

Mixing casting slip

You will need:

Powdered clay.
Deflocculent ingredients.
Recommended amount of water.
Wooden spoon and bucket.
80 mesh sieve.

☐ Mix the powdered clay ingredients together by shaking, either in a lidded container or in a closed sack, to prevent a build-up of dust in the atmosphere.

☐ Measure out the required water and subtract 200ml (7½fl oz) from the total. Put the remainder in a bucket.

Next, mix the deflocculent.

☐ Dissolve the soda ash in 50ml (2fl oz) of hot water.

☐ Dissolve the sodium silicate, also, in 50ml (2fl oz) of hot water.

☐ Mix the dissolved soda ash and sodium silicate together.

☐ Add three-quarters of this deflocculent to the water in the bucket.

☐ Gradually add the mixed clay powders and stir thoroughly.

The mix should be of a runny consistency. If it becomes thick, add the rest of the deflocculent. However, it may be that the total deflocculent is not needed. With a little experience you will be able to judge this.

☐ Pass the slip through the mesh sieve.

☐ Add the remaining water, as necessary, stopping when the consistency is thick but runny.

It is important to measure the deflocculent exactly; used in excess its effect is reversed and it will thicken the slip instead of improving fluidity.

If the slip is to be stored it must be covered to prevent evaporation of the critical water content. When it has been left overnight a good stir with a wooden spoon should restore its fluidity without the need for additional water. However, a little water may be added at this stage if some has been lost through evaporation.

Prepared slip can be stored for up to two or three weeks.

Casting up

You will need:

The mould and mixed casting slip.
Jug and wooden spoon.

Make sure the mould is dry and clean. If any loose pieces of plaster get into the slip they will blow through the surface when the cast is fired. Also, stir the slip thoroughly.

☐ Decant some slip into a jug.

☐ Fill the mould from the jug, taking care not to splash the sides. Keep the mould topped up. The level will drop as the plaster absorbs the moisture from the slip.

☐ When the cast has reached the required thickness—which usually takes about 10 or 12 minutes, depending on the dryness of the mould and the thickness required—the mould can be tipped to drain off the surplus slip. When the surplus slip has been poured out, the hollow cast is left behind.

☐ Leave the mould upturned, but supported at a slight angle so that drips do not run down inside the cast. Leave it until it has become firm enough to handle—about 20 to 30 minutes.

☐ While still in the mould, the cast can be trimmed with a sharp knife to remove the waste rim, as shown in fig.8.

☐ When the shine has disappeared from the slip it should be firm enough to remove from the mould. It will have shrunk in from the plaster walls and will come out very easily.

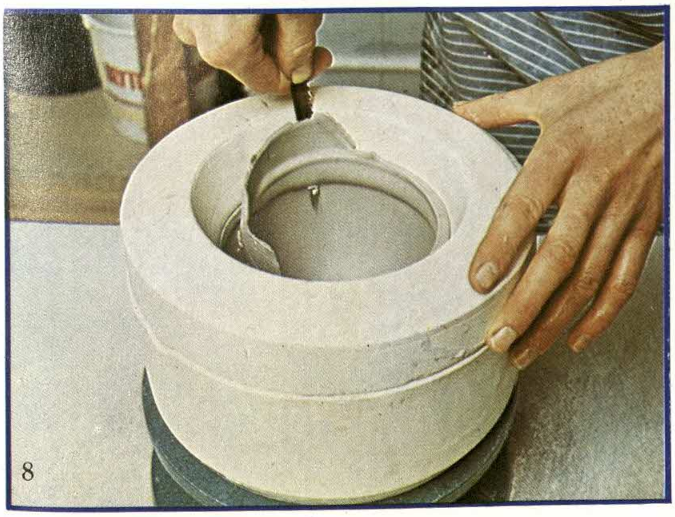
☐ Smooth and neaten the rim with a damp sponge (fig.9).

Any relief, slip or carved decoration should be done before the cast is left to dry thoroughly for biscuit firing.

The mould can be filled again straight away, but it is not possible to get more than six casts from a mould without allowing it to dry out before continuing casting. Leave it somewhere warm, but away from any direct heat source which would harm the mould.

Having cast a flowerpot, and understood the principle of slip-casting, you should be able to cast your own crockery, from bought moulds or from models of your choice.

If necessary, the slip-cast article can be finished off with a handle, a fitted lid, etc, using techniques which are described in previous chapters. Any slip-cast article can also, of course, be decorated and glazed as you choose.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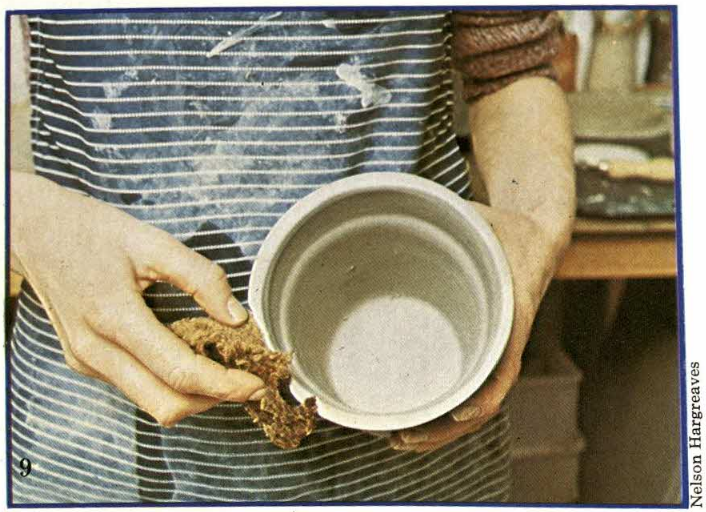
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Nelson Hargreaves

Techniques for moulding

Leather 13

The malleable properties of cow-hide are illustrated in previous Leather chapters on tooling and making relief patterns. Considerably greater scope remains, however, for whole pieces of leather can be moulded into rounded even semi-spherical shapes by stretching them over or round a curved former.

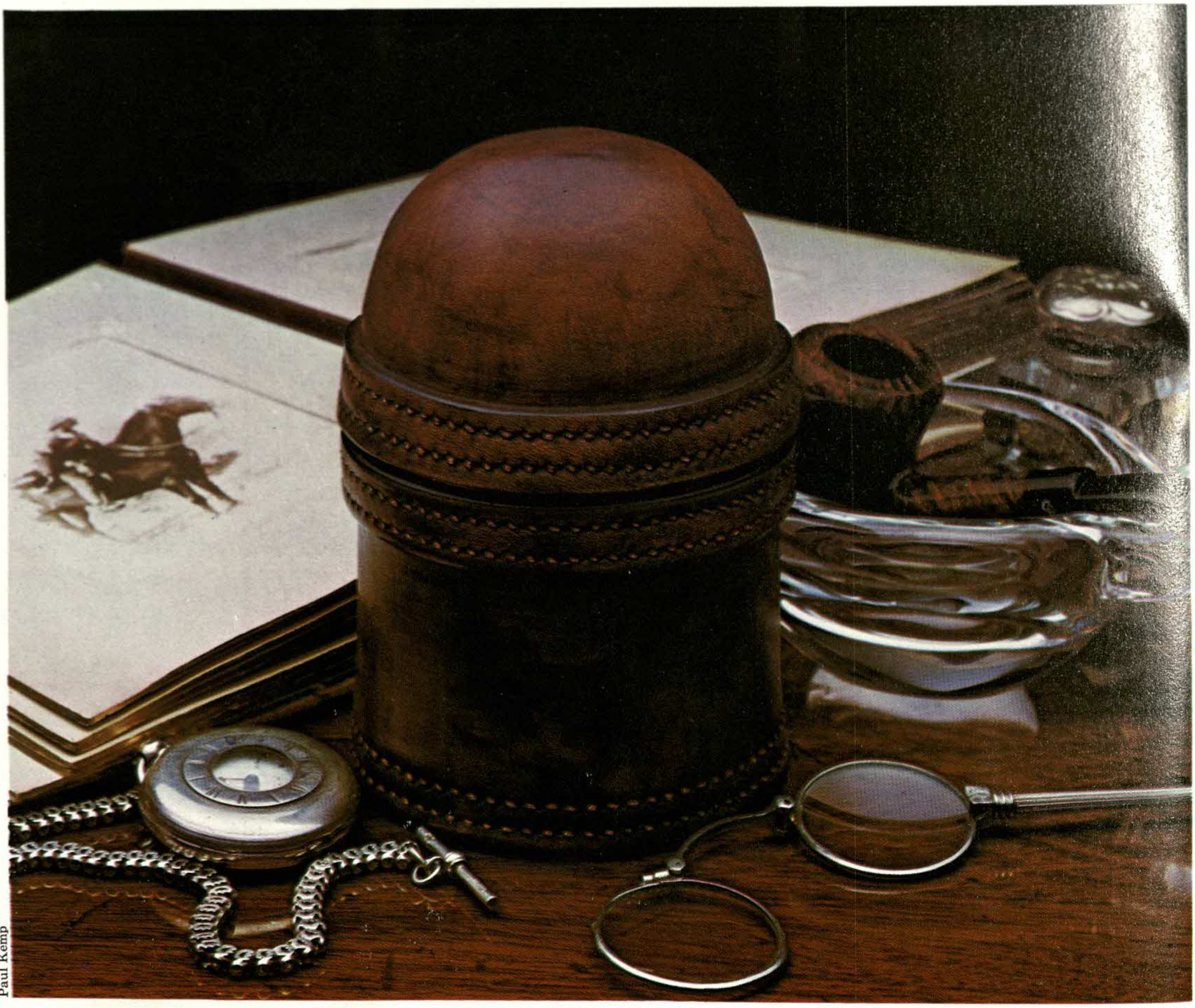
The leather used for moulding is vegetable-tanned russet hide which will absorb water and is suitable for this technique. The leather is soaked in water to make it soft and pliable enough to be pulled and stretched over another object—a former. Furthermore, leather which has been soaked in water dries much harder than it was originally and, because of this, retains its new shape.

The former over which the leather is moulded can be any firm object of a suitable shape—a biscuit tin or milk bottle for example. The saturated leather is placed over the former and stretched over the shape. Any creases or wrinkles can be smoothed out by pressing down with a smooth hard implement such as the back of a spoon. The thicker the leather used for moulding, the more problem there will be with creases.

There is a limit to what one piece of leather can be made to do. If you try to mould a piece to an unsuitable shape you will find that the creases are too many to smooth out.

When the leather has been moulded satisfactorily over the object it is secured with nails or string until it is dry. The string or nails are used on the leather that is trimmed off later. When the leather is dry it is trimmed to size while still on the former and then removed. It can then be stitched and polished as usual to make up the object. Because the leather is quite hard, stitching will be more difficult.

The leather dome-topped box makes a perfect container for pipe tobacco. Designed by John Williams.



Paul Kemp

Paul Kemp

The leather is stretched and pulled over the dome-shaped former.

The box

This handsome dome-topped box is 14cm (5½") high and 10cm (4") in diameter. It can be used as a container for tobacco or cigars.

You will need:

Materials

4mm ($\frac{3}{16}$") thick vegetable-tanned cowhide 31.8cm x 34.3cm (12½"x 13½").
Linen thread.
Beeswax.
Leather adhesive and leather dyes.
Methylated spirit (if you are using aniline powder dyes).
Wax polish.
Steel tacks or piece of string.
A cylinder 9cm (3½") diameter and 12.5cm (10") high with a domed top to serve as a former. This should be made of wood or any other hard material such as metal.
Set square and pencils.
Felt pad on wire to apply dye.
Scrap of canvas.
Polishing rags and brushes.

Tools

Skiving knife.
Sharp knife such as a Stanley knife.
Harness needles size 2 or 3.
Edge shave or medium grade glass-paper.
Pair of dividers with adjustable screw.
No.6 pricking iron.
Steel rule.
Bone folder or spoon.
Pair of compasses.

To make the most economical use of the leather prepare a cutting layout on the piece of leather.

The top

☐ Draw a circle with diameter 20cm (8") on the grain side of the leather and cut out.

☐ Place leather in a bowl of water and leave for 20 minutes.

☐ Remove from the water, allow surplus water to drain from the leather, then place centrally over the top of the domed former and start to press the leather down over the former into a dome shape. It will take some time to mould and stretch the leather and folds will appear round the edges.

☐ Smooth out these folds with the back of a spoon or a bone folder.

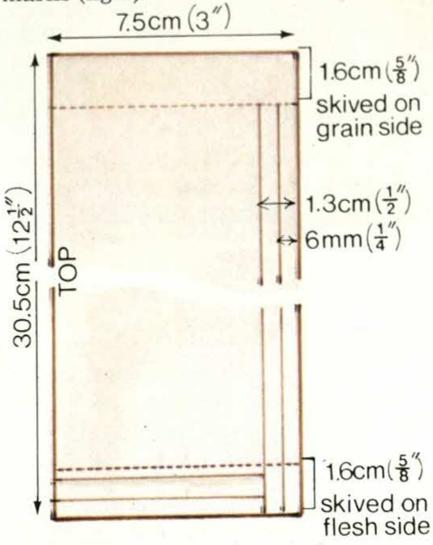
☐ Tack or tie the leather on to the former as you work and leave to dry.

The sides

☐ While the leather is drying, proceed with the sides of the box.

☐ Cut out a rectangle of leather 7.5cm x 30.5cm (3"x12½")—this allows 1.7cm (⅝") for the seam on the short sides.

☐ Skive the two shorter edges one on the grain side, one on the flesh side. Mark the lines of stitching and stitch marks (fig.1).



1. *The piece for the sides showing stitching lines and skiving areas.*

☐ Wrap the strip round the cylindrical former to check that it is the right size, apply glue to the two skived areas and stick together.

☐ Stitch along the two vertical lines of stitching.

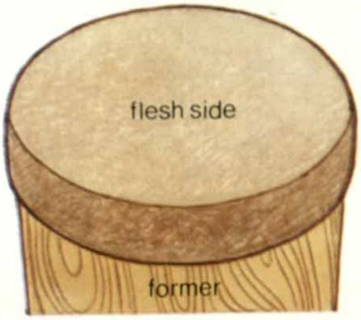
The base

☐ Cut out a circle 12.5cm (5") diameter, and trim grain side edges with the edge shave.

☐ Make a shallow cut on the flesh side of the circle 2cm (¾") from the edge, all the way round.

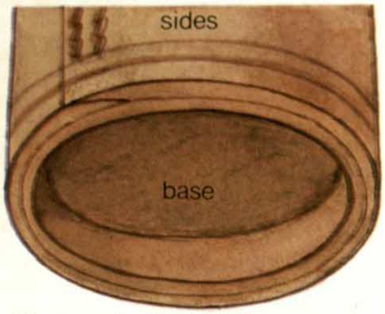
☐ Moisten the outer edges of the base, ie the area between the shallow cut and the edge.

☐ Place the piece over the flat top of the cylindrical former, grain side down, and press the outside edges over the side of the former, to make a shallow dish shape (fig.2).



2. *Moulding the base.*

☐ Moisten the bottom edges of the sides of the box and insert the base grain side outermost (fig.3).



Barbara Firth

3. *The base is glued in place.*

☐ Make sure the base will fit neatly into the sides, and then remove the base and leave it to dry for about 24 hours.

☐ When dry, apply glue to the rim of the base on the flesh side, and to the corresponding area inside the box.

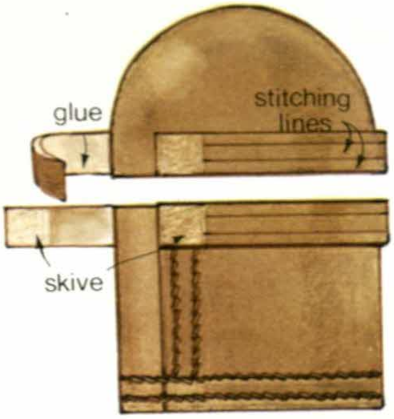
☐ Stick the base piece in position and stitch along the lines already marked. When the dome shape is dry, draw a line round the leather, just above the tacks or string, keeping the line level.

☐ Cut along this line with the sharp knife and remove the dome shape.

☐ Cut two strips of leather 1.6cm (⅝") wide, equal to the outside circumference of the box plus 1.6cm (⅝"). Skive each end, one end on the flesh side one end on the grain side. Trim the grain side edges with the edge shave.

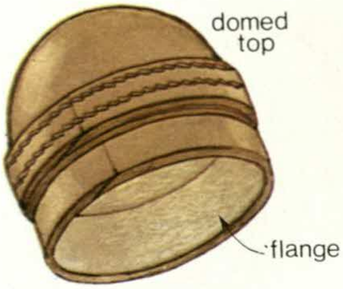
☐ Make stitching lines and marks 5mm ($\frac{3}{16}$") from each long edge of the strips on the grain side.

☐ Glue and stitch these strips to the base and lid (fig.4).



4. *Strips stitched to top and bottom.*

☐ Trim the sharp edges of the strips with the edge shave.
☐ Cut another strip 4cm ($1\frac{1}{2}''$) wide, with length equal to the inside circumference of the box plus 1.6cm ($\frac{5}{8}''$) for the seam. This will form the flange which is attached to the lid and fits inside the box when the lid is in place.
☐ Skive each end of the strip—one end on the flesh side and one end on the grain side—and glue in place (fig.5).



5. *The flange fitted inside the top.*

The flange on the box illustrated is stitched on, but as there are three thicknesses of leather at this point, stitching is very difficult and not really necessary as the glue is quite strong.
☐ Using leather dyes (see Leather chapter 9, page 2118) dye the box brown.
☐ Rub all the cut edges with a canvas rag and water to give a shine.
☐ Apply a coat of wax polish and the box is complete.

The bottle

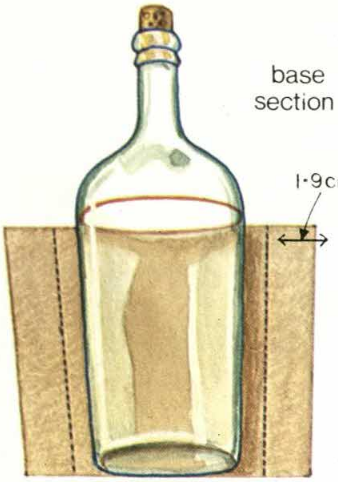
The covered bottle can be used as a travelling flask as it is well protected and can withstand rough treatment. It is 20cm (8″) high and involves the same moulding techniques as the box, but here the former, ie the bottle, is a part of the finished object.
Any sized bottle can be used provided it is not of a too unusual shape.

You will need:
Tools as for the box.
2mm ($\frac{1}{16}''$) thick vegetable-tanned russet cow-hide, 25cm x 30cm (10″x 12″).
Bottle about 18cm (7″) high.
Thread, wax, polish, dye, rags as for the box.

The cover for the bottle is made in two halves—a top and a bottom. Each half is made of two pieces of leather, one for each side.
☐ Following fig.6 draw a line round the bottle to mark the division between the top and bottom halves.
☐ Place the lower half of the bottle on the flesh side of the leather with a straight edge on the leather aligned with the drawn line on the bottle (see fig.6).
☐ Estimate how much leather would be needed for covering exactly half the bottle by rolling from side to side and marking the leather. Add on 1.9cm ($\frac{3}{4}''$) to sides to allow for stitching and mark the cutting line (see fig.6). The base of the bottle is to be left uncovered.
☐ Remove bottle and cut out the piece of leather. Cut another piece exactly the same shape for the other side.

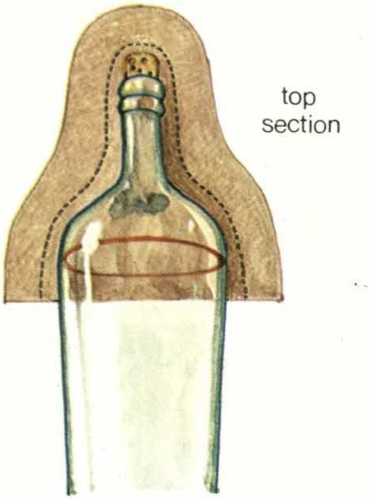
The covered bottle makes a useful travelling flask. Design by John Williams.

☐ Place the upper half of the bottle on another piece of leather with the straight edge of the leather coming 1.3cm ($\frac{1}{2}''$) below the line drawn on the bottle to allow for an overlap (fig.7).
☐ Determine the cutting line in the same way as before and cut out the piece of leather.
☐ Cut another piece exactly the same size for the other side.
☐ Glue each piece on the flesh side along a margin of 1.9cm ($\frac{3}{4}''$) round the edges (fig.8).
☐ Place each corresponding piece with flesh sides together to make two envelopes of leather into which the bottle can be inserted (see fig.8).
☐ Soak both top and bottom leather pieces in water and fit each over the bottle. Pinch the sides for a good fit but allow for overlap of top half.
☐ Draw a line round the glued edges as close to the bottle as possible to mark the line of stitching (fig.9).
☐ Remove the pieces from the bottle and flatten them sufficiently to make stitch marks along the drawn line (fig.10).
☐ While the leather is still damp, stitch along the edges of both pieces.
☐ Put the leather pieces back on the bottle. If they seem to be too small, soak the pieces again and ease on to the bottle.
☐ Trim the leather to within 3mm ($\frac{1}{8}''$) of the stitching (fig.11), and along the top and bottom edges if necessary.
☐ Round off all the cut edges with the edge shave or medium grade glass-paper.
☐ Dye the cover brown (see Leather chapter 9, page 2118).
☐ Rub the cut edges with a piece of canvas and water.
☐ Leave to dry overnight and then wax and polish.

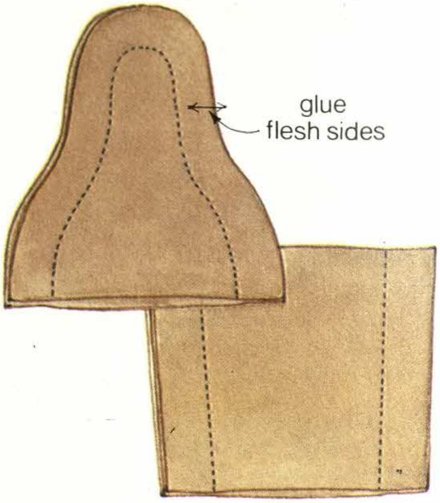


Barbara Firth

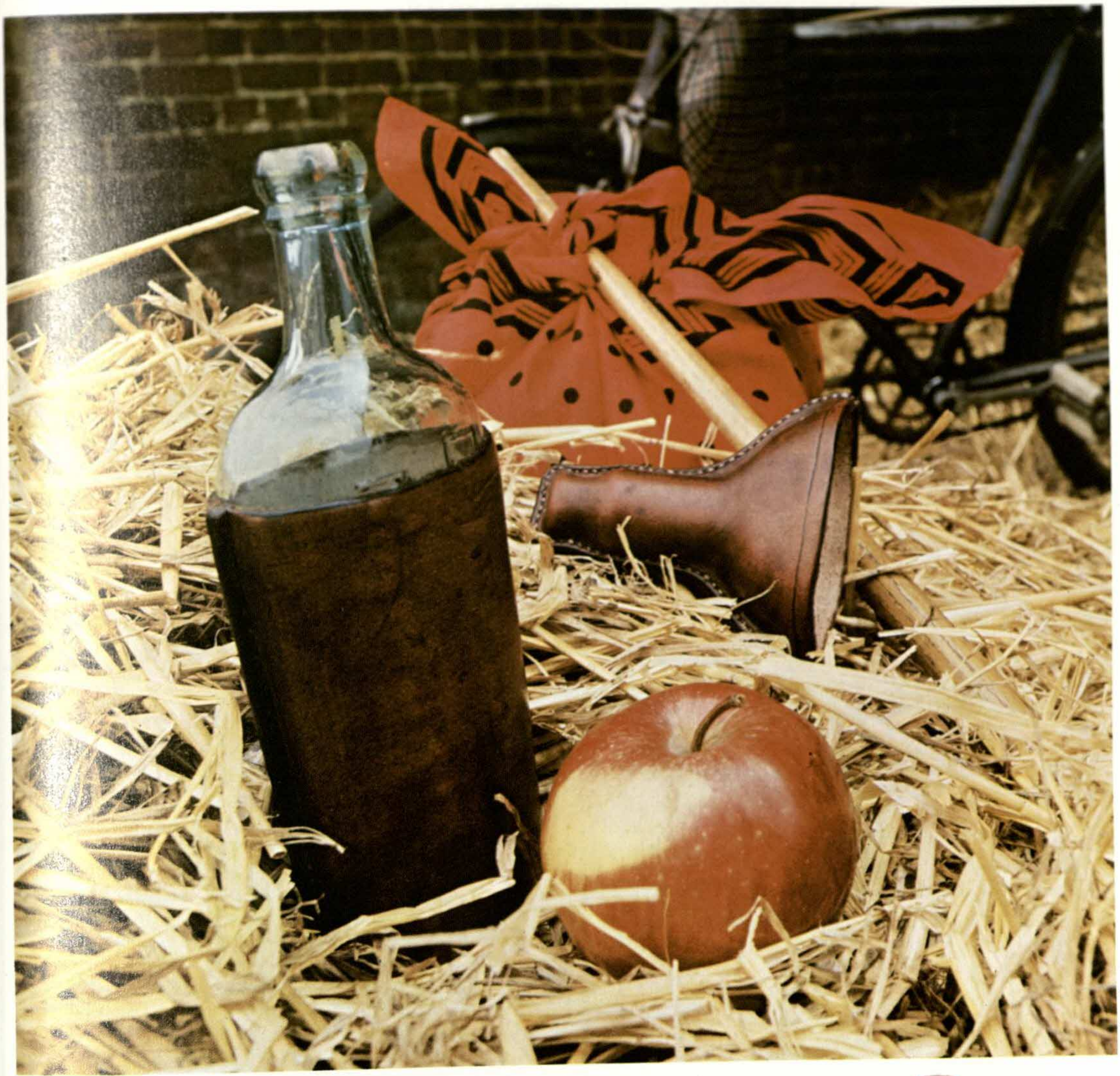
6. *The shape of the base piece.*



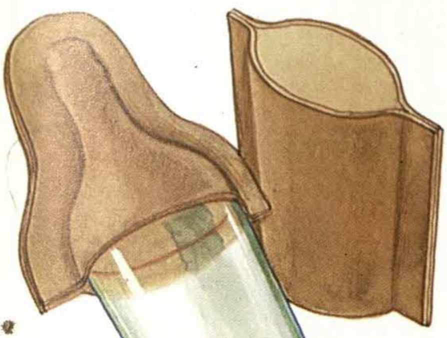
7. *The shape of the top piece.*



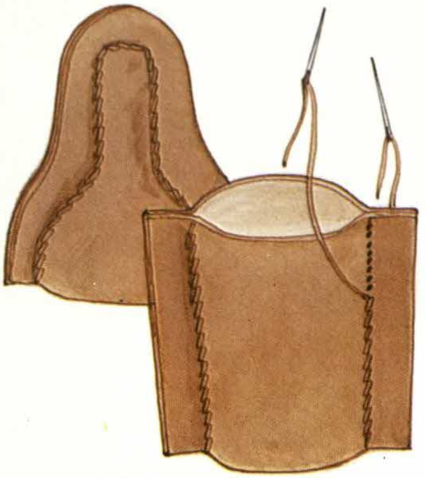
8. *Glue the top and bottom pieces.*



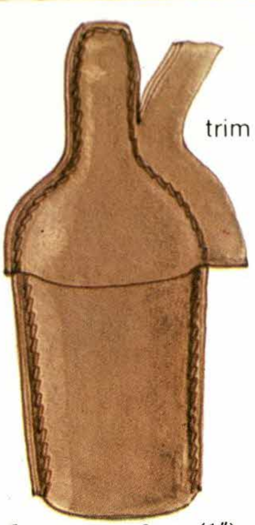
Geoffrey Frosh



9. *Mark in the stitching lines.*



10. *Stitch the base and top pieces.*



11. *Trim the seams to 3mm ($\frac{1}{8}$").*

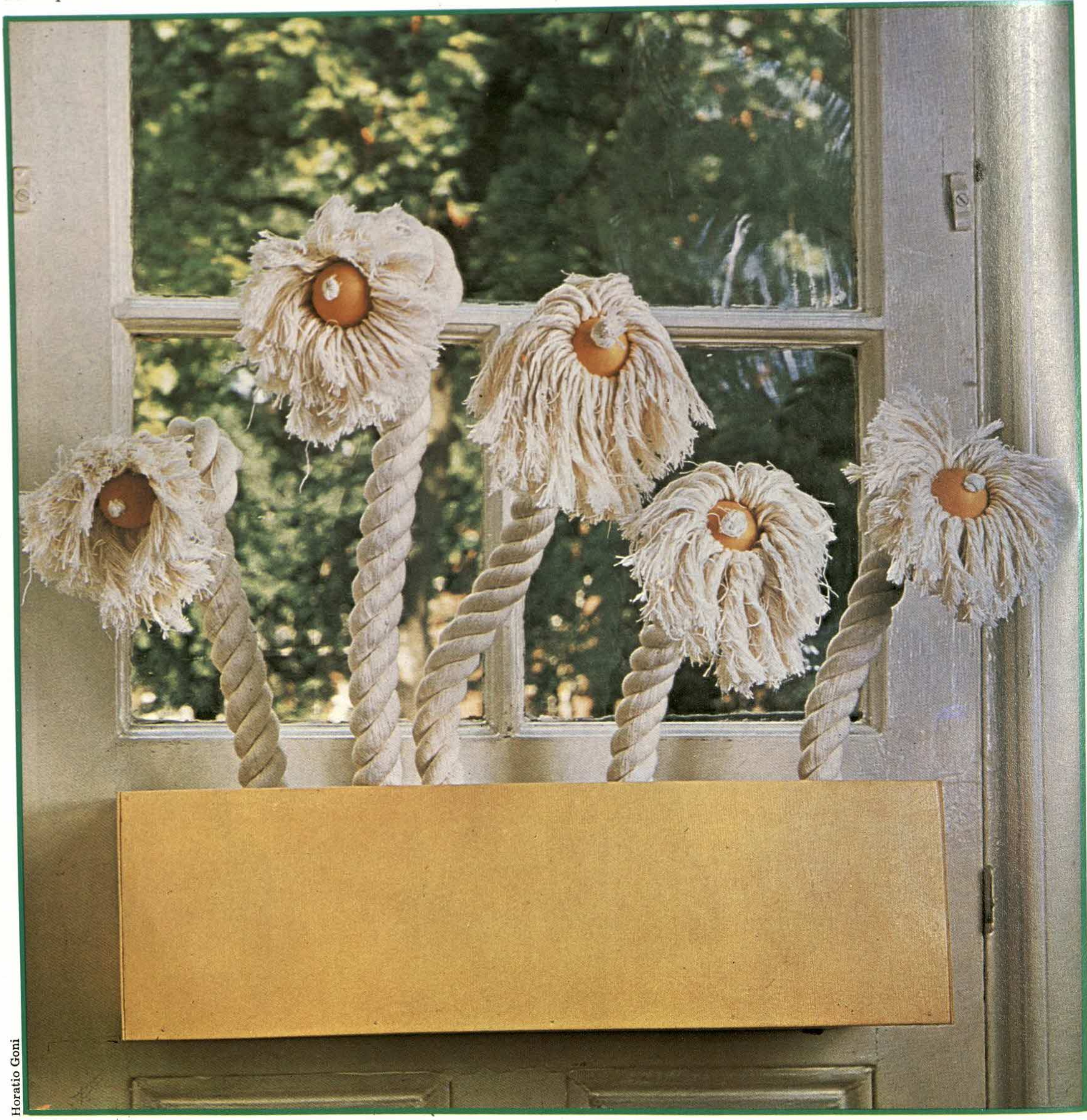
Re-cycled rope 'flowers'

Yarn — ropework 5

The 'daisies' in the photograph were made from offcuts of rope, some of them pieces too short to be saved for functional purposes.

All kinds of rope from about 1.5cm-2.5cm (½"-1") diameter can be used in this way. The fibrous texture and pliancy of vegetable-fibre ropes (such as jute, hemp and cotton) are easier to work with than synthetic ropes which are stiffer and more springy.

The following instructions are given to show how the daisies in the photograph were made but they can, of course, be adapted. Rope flowers are so quick and easy to make that it is worth experimenting to find a variety of shapes to suit your purpose.



Soft cotton rope offcuts are made into these unusual 'daisies'. Designed by Horatio Goni.

Horatio Goni

Rope daisy

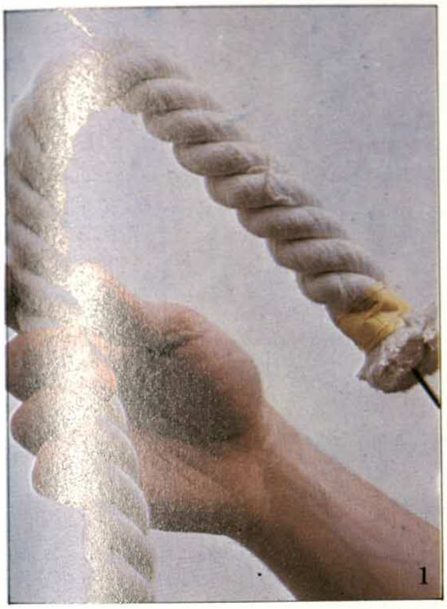
You will need:

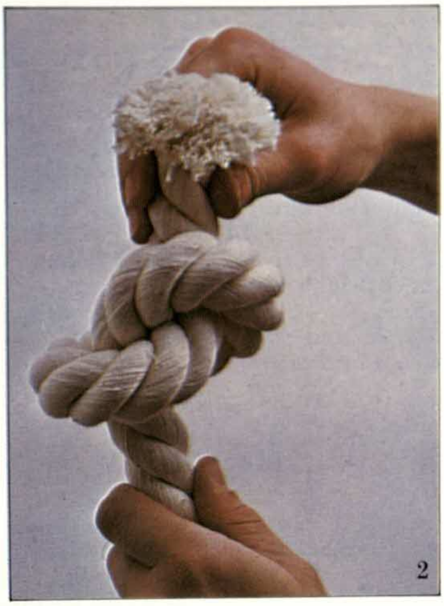
30cm-40cm (12″-18″) thick cotton rope.
Yellow ball (such as a snooker ball).
Wire coat-hanger. Wire cutters.
Drill and 3mm ($\frac{1}{8}$″) drill bit.
Adhesive tape, 2.5cm (1″) wide.

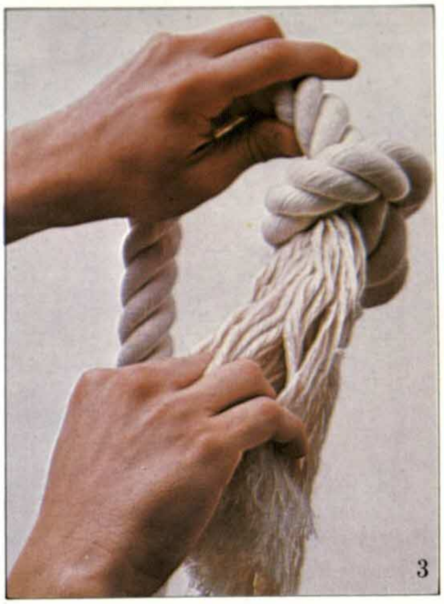
☐ Bind one end of the rope with adhesive tape to prevent fraying. Cut off the straight section of wire from the base of the coat-hanger and insert it in the bound end of the rope. Push it up for about 20cm (8″) (fig.1). Trim off any excess wire.

☐ Tie the other end of the rope in a simple overhand knot and pull the end through for about 10cm (4″) (fig.2).

☐ Fray out the end of the rope (fig.3).

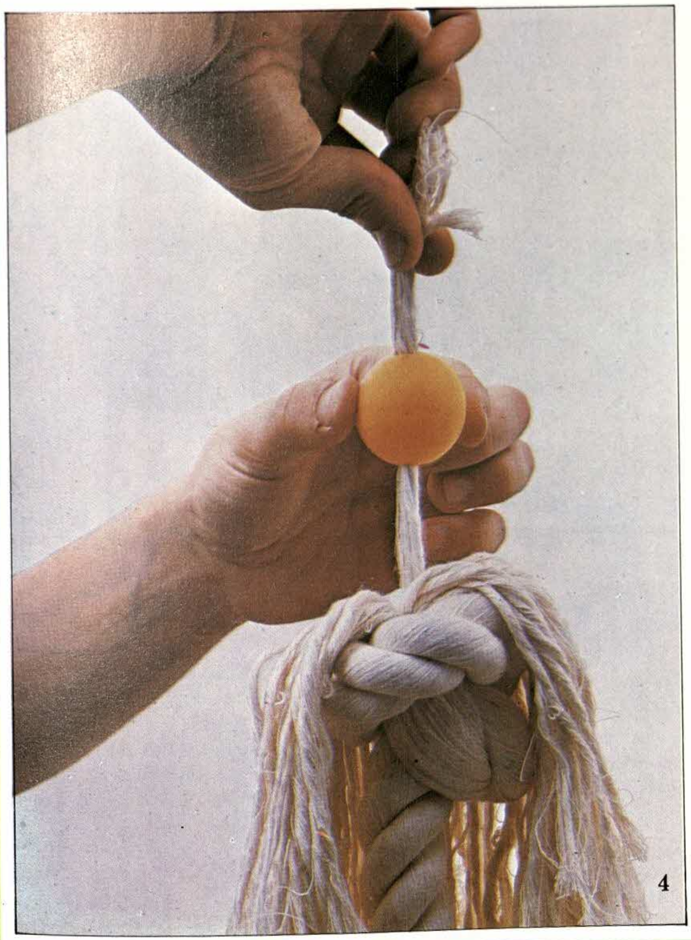


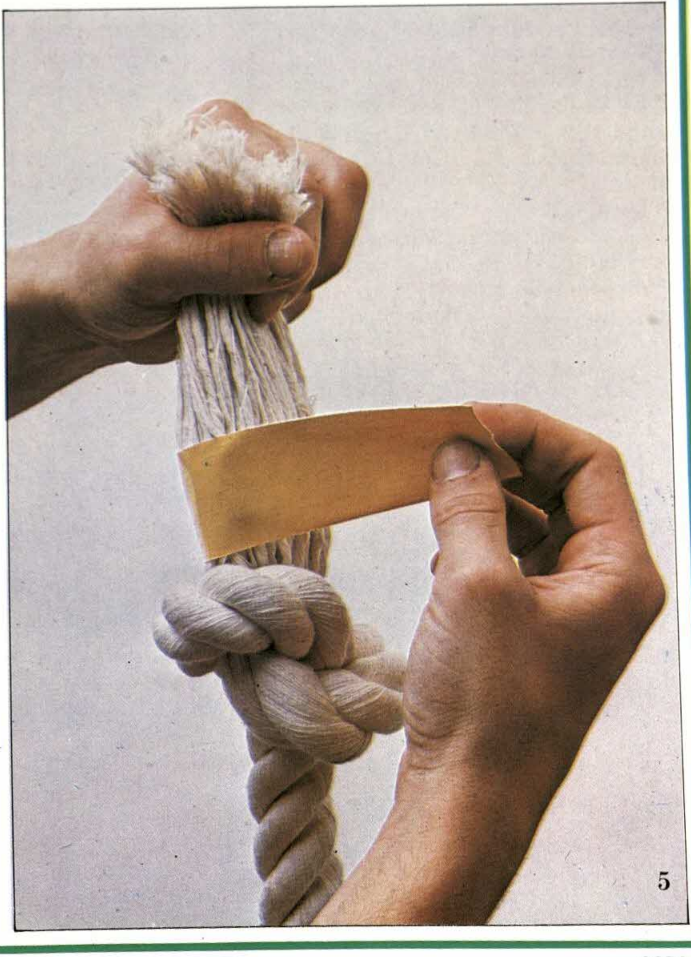




☐ Drill a hole through the snooker ball and thread some of the rope fibres through the hole (fig.4). Tie with an overhand knot and trim off the excess rope fibre.

☐ Hold the remaining rope fibres round the ball to enclose it as shown in fig.5 and wrap round some tape. Allow the fibres to drop to complete the daisy.





Modular unit-desk and shelves

Wood — carpentry 25

The previous Carpentry chapter describes how to make the primary unit of the modular system of furniture—a small box plus one possible extension of it, a rectangle. While keeping the square front of the units, you can increase the size and vary the depth for a wider range of storage furniture.
This chapter describes the construction of a wall-hung desk which can be used as a dressing-table or a work area in a teenager's room or study. The unit is developed with the addition of doors.

Fitting doors

A number of different types of doors can be fitted to any unit, the simplest being a panel of 16mm chipboard cut to the required size.
Basically there are two ways of hanging a door: in one the door is inset, ie fits flush within the carcass (framework) of the unit. In the other, known as lay-on, the door fits on the carcass.

Inset doors

The inset door is more difficult to fit than the lay-on as it requires careful measuring and cutting to ensure that it does not stick or look badly fitted. The advantage of the inset door is that it makes use of inexpensive and widely available butt hinges (see box).

You will need:
16mm pre-veneered chipboard for door—size as required.
Butt hinges with an open width of 2.5cm—two for each door.
Chipboard screws to fit hinges.
12mm bevel edge chisel.
Screwdriver, wooden mallet, marking gauge, pencil and ruler.
Drill and suitably sized drill bits.

☐ To fit an inset door, take the inside measurements of the box and cut the door slightly smaller to fit.

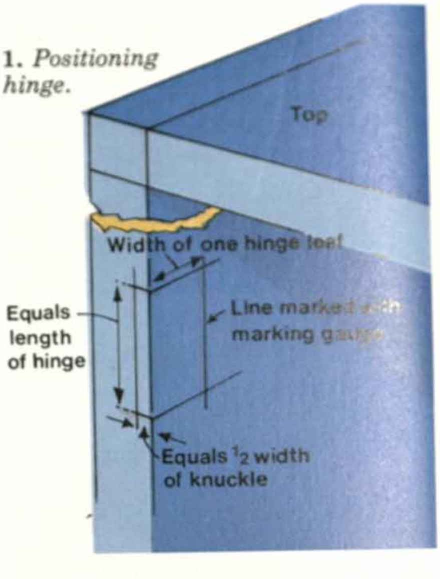
☐ Position the door inside the carcass so that it fits flush with the edges. Raise the door slightly with cardboard or thin pieces of wood so that it stands in its correct position.

☐ Make a pencil mark on the door and carcass 8cm from the top of the door. Repeat at the bottom.

☐ Remove the door. Set a marking gauge to half the thickness of the hinge knuckle and mark a line on the facing side of the door and carcass edge (fig.1).

☐ Set the marking gauge to the width of one hinge leaf and mark out on edge of door and side of carcass (see fig.1).

☐ Use a pencil to mark the length of the hinge. The top of the upper hinge coincides with the top line drawn earlier and the bottom of the lower hinge with the other.



1. *Positioning hinge.*

Trevor Lawrence

☐ Use a chisel to cut round the outline of each hinge leaf (fig.2). Chisel out waste wood to leave a neat, flat-bottomed recess into which the hinge fits. Repeat the procedure on the door.
Note: make the recess too shallow rather than too deep as it can always be cut deeper to allow the hinge leaf to lie flush in it.

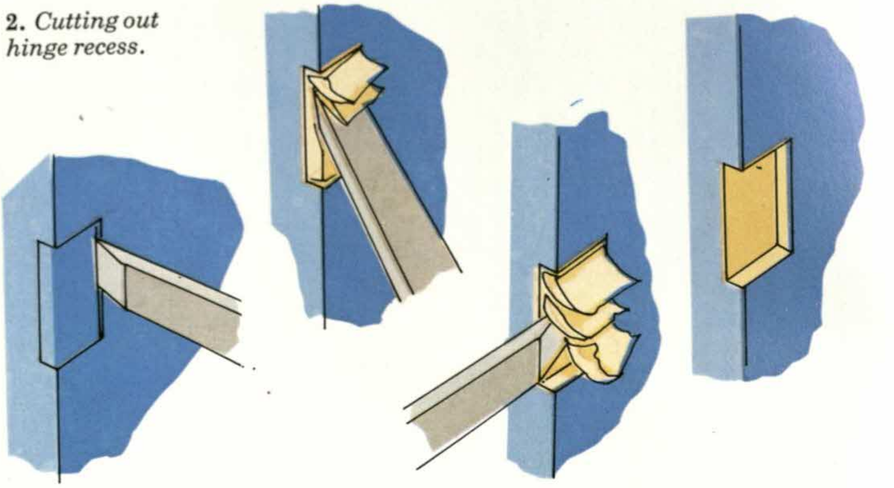
☐ When the hinge leaves fit neatly, drill one hole through the centre hole of each hinge leaf into the door and carcass. Do not drill the other two holes in each side leaf yet.

☐ Mount the door, fixing it temporarily with one screw in each hinge leaf.

☐ Test to see whether the door opens and closes freely. Make any necessary adjustments. Mark the remaining screw holes. Drill the holes and insert screws.

Make sure that the screws are sunk well into the hinge or they will prevent the door closing properly.

2. *Cutting out hinge recess.*



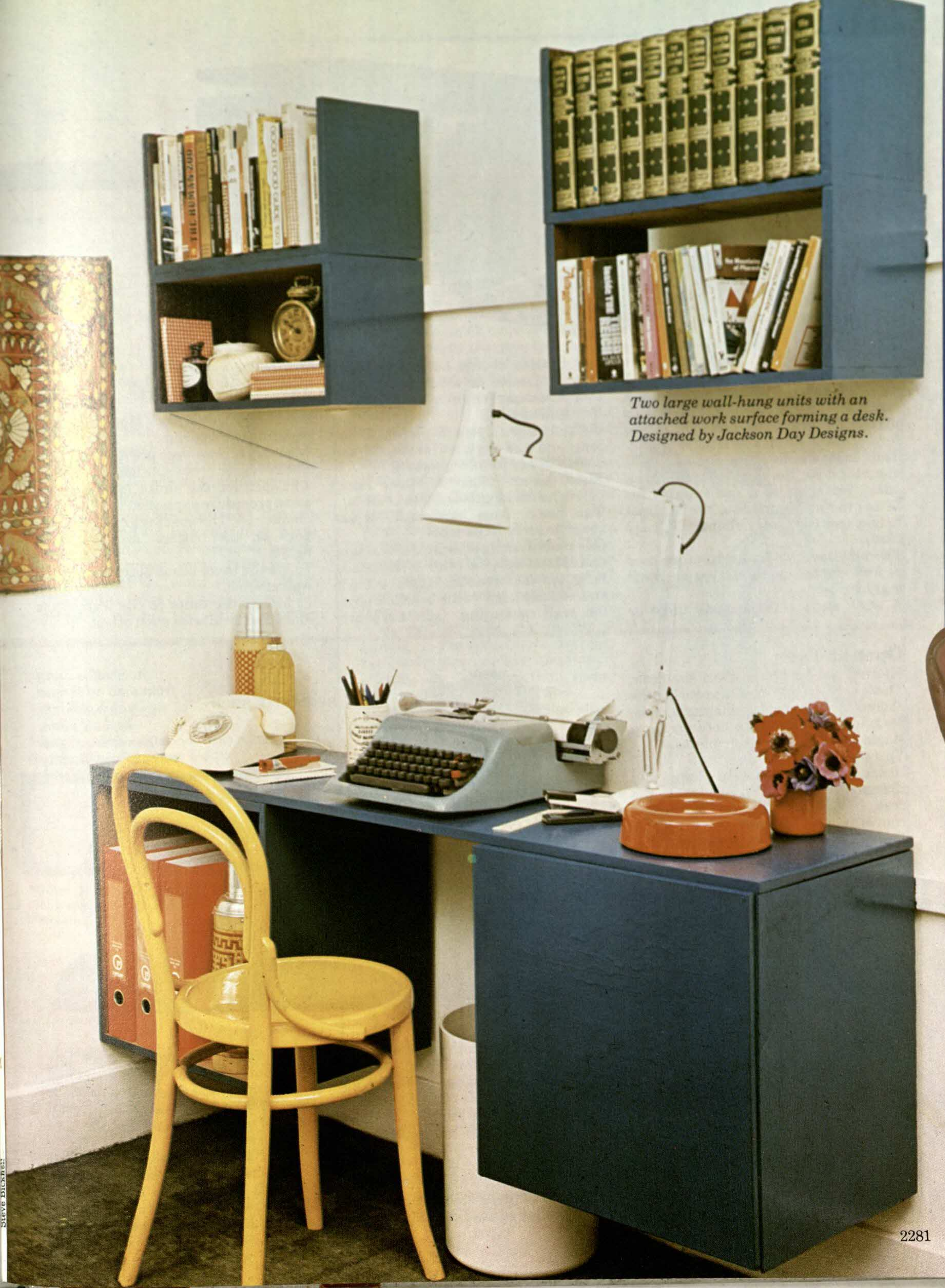
Lay-on doors

The same procedure is followed as for the inset door except that in this case the hinge fits into the *edge* of the carcass rather than the side.
The lay-on door, though easier to fit, requires a cranked or angle hinge which will lift the door clear of the neighbouring door (see box overleaf).

You will need:
Cranked or angle hinges with flaps no wider than 12mm—two for each door. For doors on the larger cupboards (200cm tall) use three hinges.
16mm chipboard for door—size as required. Tools as for the inset door.

☐ Cut the lay-on door 3mm smaller all round than the front outline of the carcass. This serves as a design feature, creating a thin 'shadow' line between each cupboard door. It also allows room for the doors to swing clear.

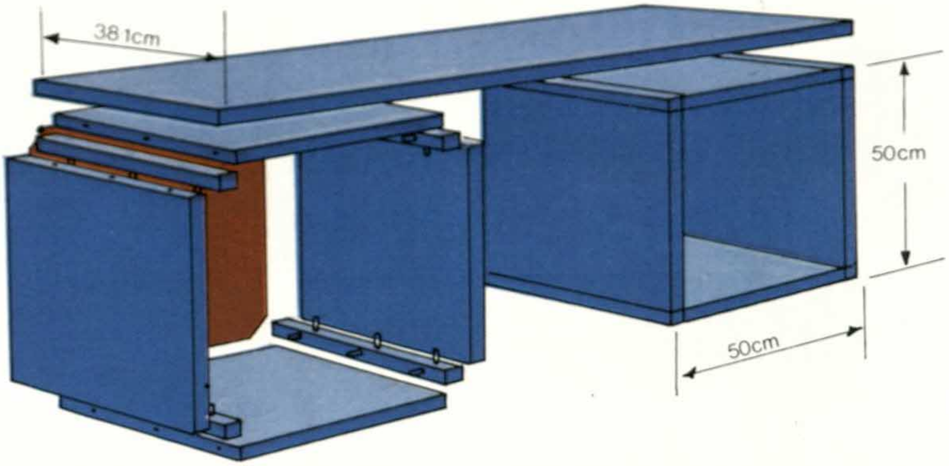
☐ Follow the same procedures described for the inset door, bearing in mind that the hinge is recessed into the edge of the door. The hinged doors can now be fitted with catches and handles (see box overleaf).



Two large wall-hung units with an attached work surface forming a desk. Designed by Jackson Day Designs.

Steve Bicknell

3a. *Construction diagram of desk with exploded view of one unit.*



Trevor Lawrence

Desk

The desk is comprised of two square units 50cm x 50cm (20″x 20″) with a depth of 38.1cm (15″). Chipboard is placed across the two units (fig.3a) to form a work surface 150cm (59″) long. The instructions are for a wall-mounted desk. For a free-standing desk adapt two units to a size suitable for lifting the work surface to the required height (see Carpentry chapter 24, page 2250).

The unit can be adapted to other uses as well and the depth can vary accordingly.

A work surface for a study table or sewing area should be larger than a dresser. Decide on a size to suit your own particular requirements.

You will need:

Eight 16mm chipboard panels 46.8cm long and the required depth, in this case 38.1cm—for the two units.

Eight pieces 16mm x 16mm ramin batten, same length as depth of units.

Two pieces 3mm hardboard, 47.4cm square—for back panels.

One piece 16mm chipboard, 150cm long and 381mm wide—for the work surface.

Four pieces softwood, 38mm x 15mm and 46.8cm long—with bevelled edges for wall mounting (see Carpentry chapter 24, page 2250).

6mm dowelling—enough for all the joints.

No.6 chipboard screws 25mm long—for securing work surface.

Masonry screws—see previous chapter.

Tools—as for previous chapter.

☐ Construct the units following the same procedure explained in Carpentry chapter 24. The spacings for the dowel pegs on the battens are shown in fig.3b.

☐ Fit the bevel edged softwood for the wall mounts.

☐ Mount the units to the wall, 50cm apart and level with each other.

Open shelves

Shelves can be fitted above the desk. There are various ways of securing the shelves (see Carpentry chapter 6, page 354). Instructions given here are for a single shelf using keyhole plates.

You will need:

16mm chipboard 46.8cm long and 229mm wide. This size is relevant to the desk but you can adapt it to suit yourself.

Two 16mm x 16mm ramin battens, 22.9cm long.

Two pieces 16mm chipboard 12.8cm long and 229mm wide—for the two ends.

Two keyhole plates—for fastening shelves to wall (fig.4).

Length of 6mm dowelling.

Two coverhead wood screws.

No.8 round head screws 50mm long for wall.

Rawlplugs for wall.

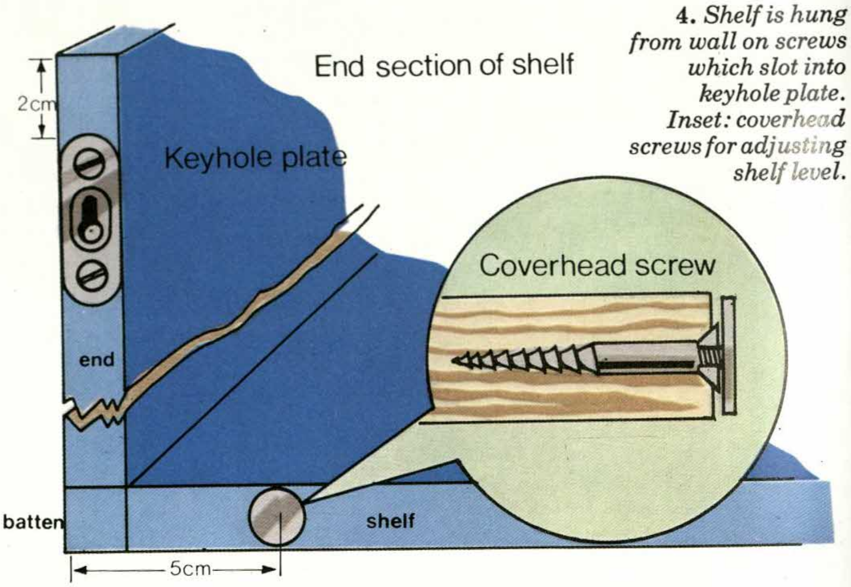
☐ Fit the keyhole plates to the back edges of the end pieces, 2cm down from the top (see fig.4).

☐ Join the ends to the shelf using the battens and dowelling.

☐ Fit two coverhead screws in back edge of shelf, 5cm from each end (see inset, fig.4). These are screwed in or out to adjust the shelf to the wall level.

☐ Measure the distance between the centres of the keyslotted plates, mark the wall with this length at the required height. Check the level with a spirit level and drill and plug the wall. The heads of the screws should project about 3mm from the wall.

☐ Hang the shelves on No.8 round head screws.

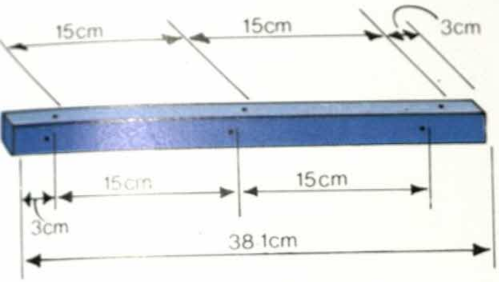


4. *Shelf is hung from wall on screws which slot into keyhole plate. Inset: coverhead screws for adjusting shelf level.*

Plinth

If a series of floor-standing units is required, they should be placed on a plinth (fig.5). This will correct any misalignment due to uneven floors and keep the doors and drawers clear of the carpet. Make the plinth the overall length of units to ensure that they are all on the same level.

To make a plinth, measure the total width of the units and cut the front and back rails of the plinth from 50mm x 25mm softwood to this length. Cut the side rails 25mm shorter than the depth



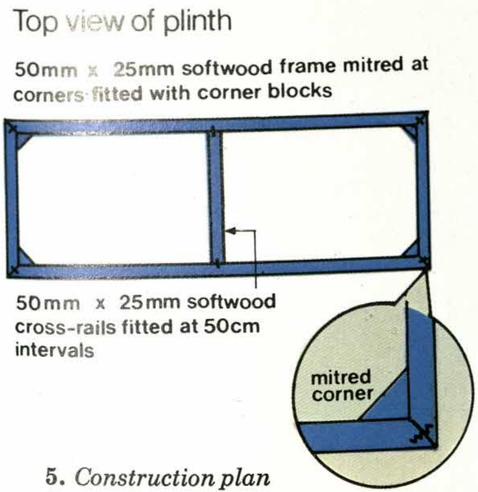
3b. *Positions for dowels on batten.*

☐ Place the chipboard for the work surface across the tops of the two units forming a knee hole.

☐ Fix the work surface to the units with countersunk screws driven up through the top of the boxes.

A larger desk with a wider knee hole will need rails across the underside of the work surface.

To do this, measure the width between the units and cut two rails from 50mm x 25mm softwood to required length. Glue and screw these rails to the underside of the work surface, 38mm in from the front and back edges. This serves to prevent the surface sagging.


Top view of plinth
50mm x 25mm softwood frame mitred at corners fitted with corner blocks
50mm x 25mm softwood cross-rails fitted at 50cm intervals
mitred corner

5. *Construction plan for plinth.*

of the unit. Mitre corners, pin and glue. Fit corner blocks to reinforce joints.

Add a centre cross-rail for every unit or at intervals of 50cm. Finish to match units. Use spirit level to check evenness of plinth and, if necessary, plane off excess timber.

Mobile boxes can be made by simply screwing on plate-fixed castors to the bottom of the unit.

Hardware

Hinges

There are numerous types of hinges available. However, a butt hinge and an angle or crank hinge is all that is required for inset or lay-on doors. The butt hinge is the most common hinge and is used on an inset door. The angle or crank hinge is used on a lay-on door because it is designed to lift the door clear of adjacent doors.

Catches

Having hinged the door, it has to be fitted with a catch or lock to keep it closed. One of the simplest means of securing a cabinet door is to fit a magnetic catch. This consists of a plastic mounting containing a magnet (usually sprung to take up any misalignment) and a metal sticker plate.

The mount is screwed to the inside of the carcass and the plate to the back of the door, in line with the mount.

When fitting a catch it is advisable to place it near the handle. The force applied when opening the door will tend to twist it if positioned off centre. This is most noticeable on long doors.

A catch that does not require a handle, is the auto-latch. To open the door one simply presses it slightly to release the spring mechanism.

There is a variety of catches available from hardware stores and you should find it easy to obtain one suited to your needs.

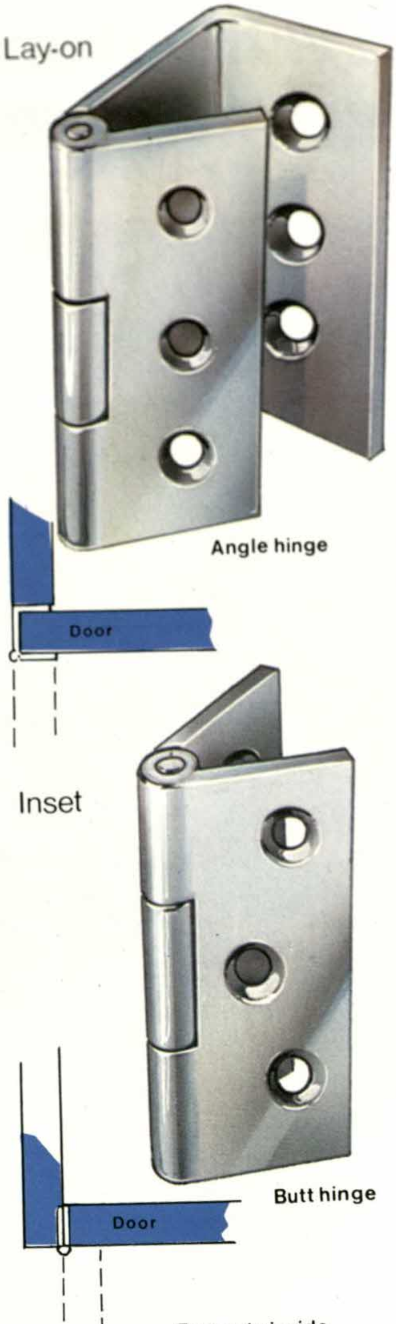
Handles

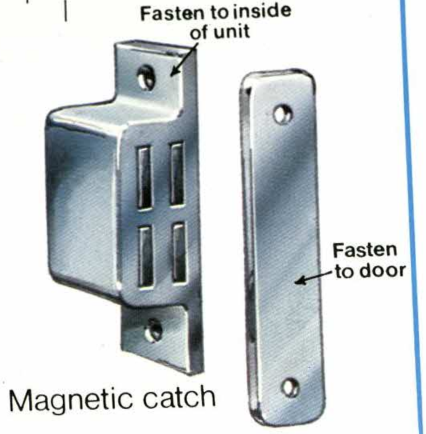
There are a number of handles that can be fitted, both plain and fancy, and the final decision is a matter of personal choice.

To make a simple inexpensive handle for both inset and lay-on doors, drill a 2.5cm (1″) hole through the door. Round off the edges with glasspaper and finish with a stain or paint to match the door. Another cut-out type of handle is made by cutting a 5cm (2″) wide semi-circle in the edge of the door. The cut edge can be finished with strips of veneer which are then trimmed and sanded. This handle is only suitable for inset doors.

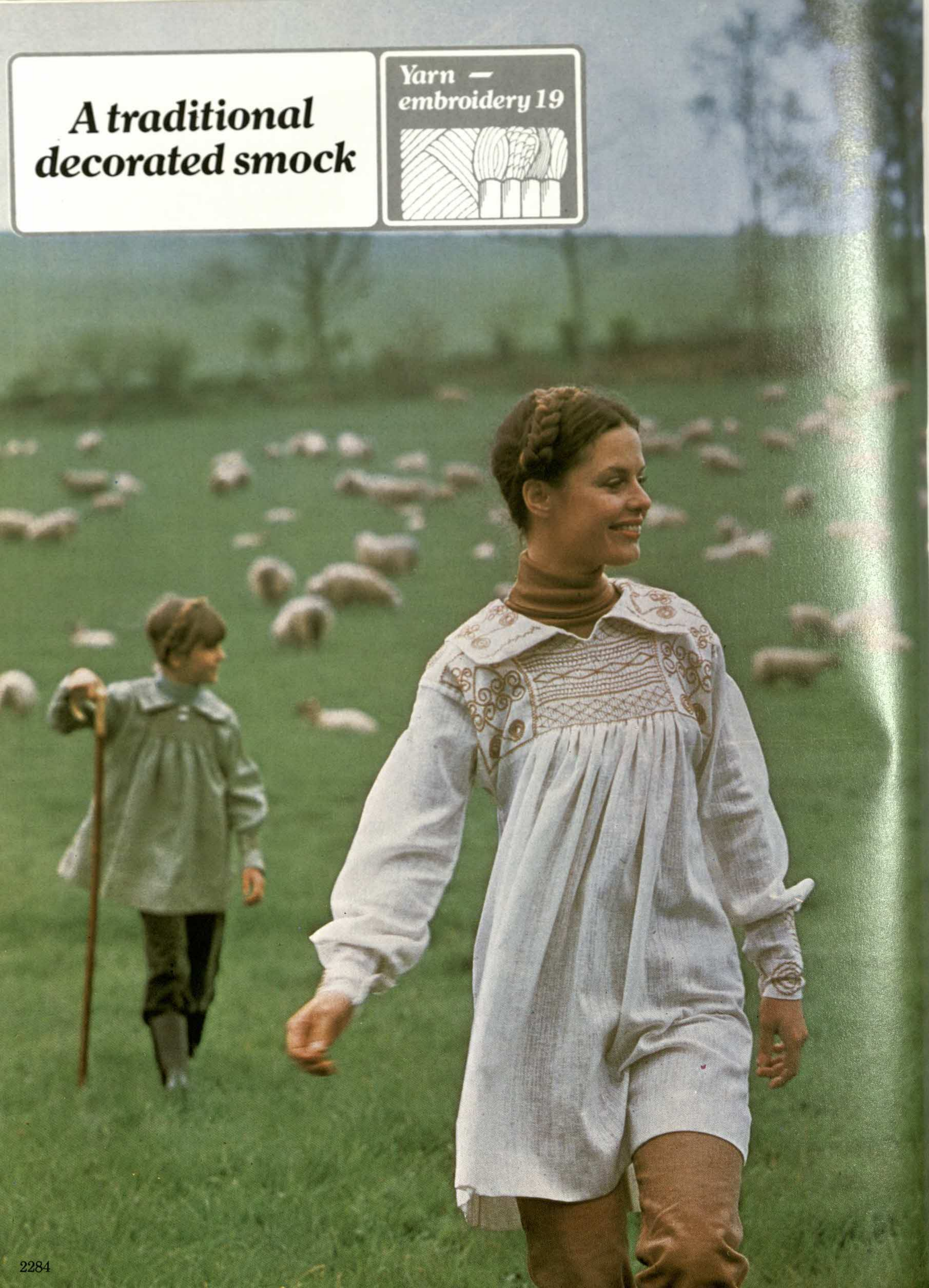
If a knob is wanted, cut a 3.8cm length of 18mm dowel and glue it into an 18mm deep hole in the face of the door.

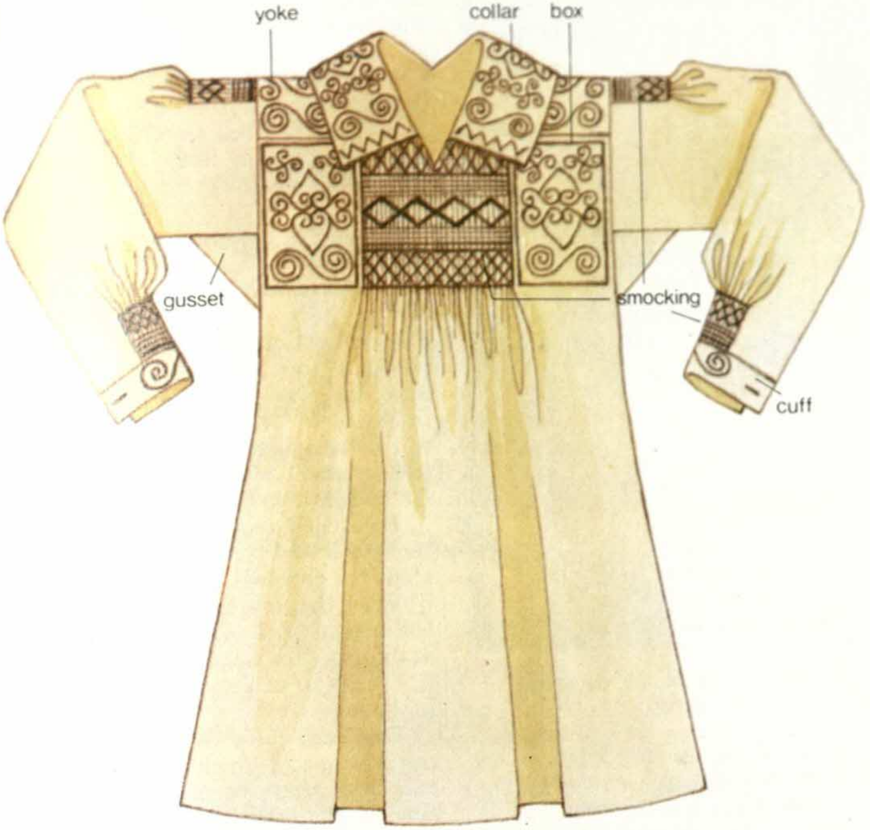
Screw-in type handles are also available—the choice really depends on the appearance you prefer.





A traditional decorated smock





1. Decorated areas of the smock. The front and back are usually the same.

This chapter describes how to make the traditional decorated smock once worn by country workmen and from which the term 'smocking' is derived.

These smocks, now collector's items, were usually identical on the front and back and were made up from rectangles of fabric—so the cutting out and preparation was of the simplest. The beauty of the smocks lies in the smocking and extra embroidery.

The panels of fabric used for the front and back of the smock were cut from the full width of the fabric (usually 90cm 36″) and smocking was worked to reduce the fullness at the centre front and back for the neck and shoulders. The sleeves were cut from half widths of fabric and, again, smocking was used to reduce fullness at the heads and cuffs.

Extra decoration was worked on the flat areas (known as boxes) on each side of the smocking as well as on the yokes, collar and cuffs (fig.1).

This embroidery was usually done in feather stitch with possibly some chain stitch, stem stitch and satin stitch, often in motifs denoting the wearer's occupation.

The motifs were often interpreted freely and they varied with the skill and fancy of the worker. They also varied according to region. In Surrey, Sussex and Kent the motifs had curving lines while those in East Anglia and the East Midlands were more angular.

In most cases the designs would be worked directly on to the smock without previous drawing, so additional stitchery was simple and linear.

Colours. The majority of country smocks were in white or natural colours ranging from cream to drab (dull brown) although deep blue was often worn in the Midlands, olive green in East Anglia and black in Surrey. The embroidery was worked in a colour to match the fabric although in Dorset white and blue thread was used.

Making a smock

Fabric. Choose a strong, plainly woven fabric, such as linen or cotton calico or cambric.

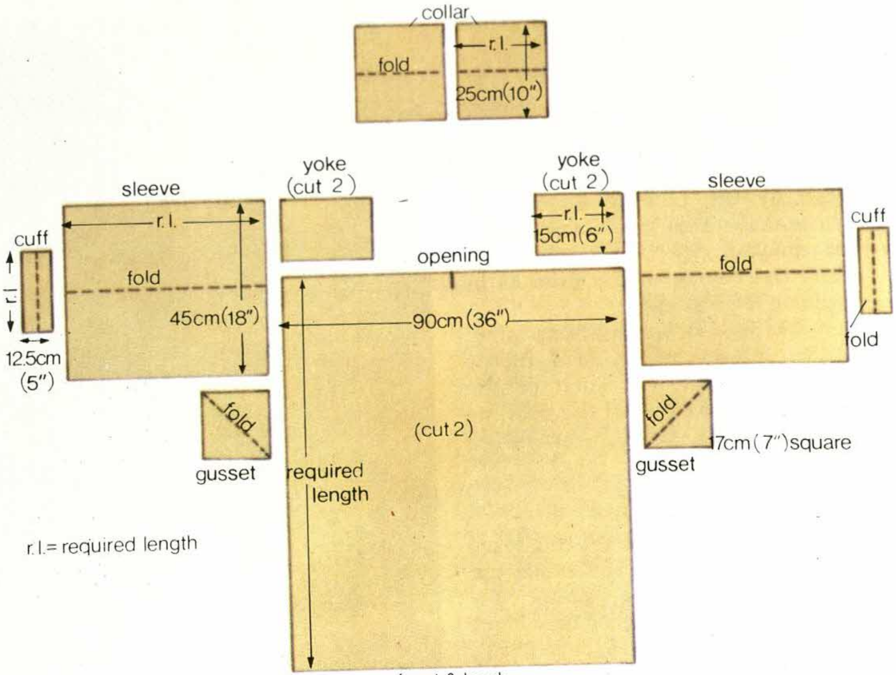
For the amount of fabric, measure the desired length from neck to hem and allow three times this amount.

Threads. For the embroidery choose a matt-finish thread of a fibre to match the fabric. For linen fabrics you could choose a linen lace thread and for cottons a soft embroidery cotton. For stitching the seams and preparing the gathers, use a strong sewing cotton.

Cutting out. Start by dividing the length of the fabric into three equal sections. Cut the sections across from selvedge to selvedge. Set aside two sections for the front and back.

The third section is used to cut out rectangles for the sleeves, collar (which is in two sections), cuffs, shoulder yokes facings and gussets. Fig.2 shows the various components of the smock with some of the measurements. The remaining measurements should be taken from the wearer.

Shoulder yokes. For the width of these, measure the wearer from the side of the base of the neck and across the shoulder and allow 1.2cm ($\frac{1}{2}$″) for turnings. The yoke facings are cut to the same size.

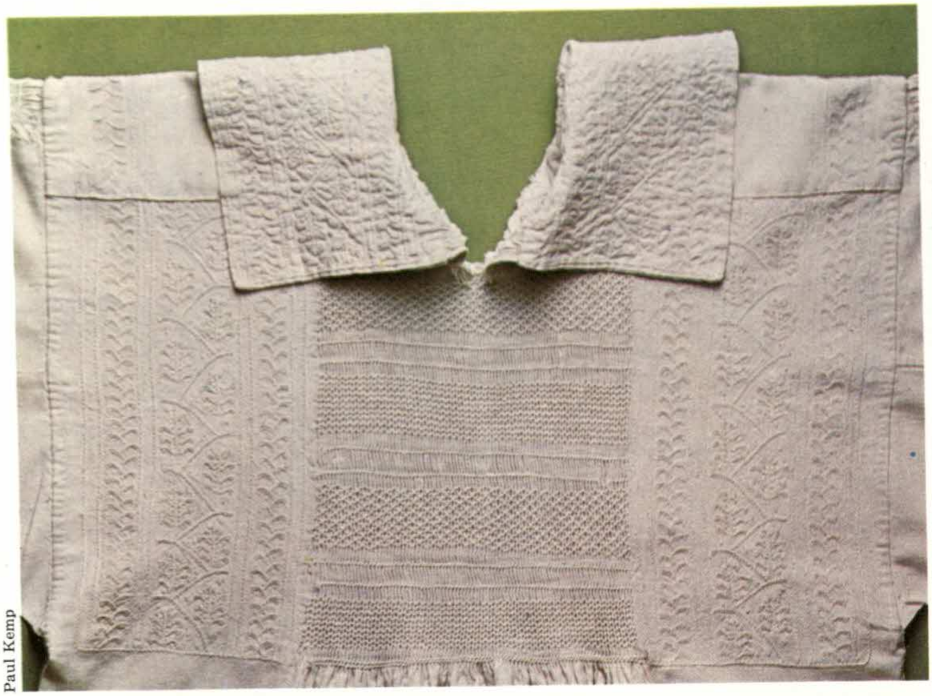


2. *How the smock is cut out. Other measurements are taken from wearer.*

Beautiful modern version of a traditional smock, made from fine linen. Designed by Cheryl Fry.

Jerry Tubby

Coral Mula



Paul Kemp

Nineteenth century smock, decorated with woodman's motifs.

Sleeves. For the length of the sleeves, bend the arm and measure it on the outside from the shoulder to the wrist. This includes ease and turnings.

Cuffs. For the length of the cuffs, measure the wrist and allow 4cm (1½″) for turnings and ease.

Collar. Cut the sections for these when the smock is partially made up and it is possible to take the measurement.

Preparing the fabric

The front and back. Measure the wearer across the shoulders and divide this measurement by four. Mark *this* measurement in from each selvedge on the top edge of each piece.

☐ Measure the wearer from the collar bone straight down to 5cm (2″) below the arm pit. Mark this measurement plus 1.2cm (½″) down from the top edge on the selvedges.

☐ Work lines of tacking along the straight grain from each mark to meet exactly at right angles. These areas enclosed by the tacking denote the 'boxes' and the area left in the middle will be smocked.

☐ Mark the centre of the area to be smocked on the top edge.

Neck opening. Cut a straight opening, 7.5cm (3″) long in the centre of the top edge on the front and back of the smock. Finish the edges of the opening with a bias-strip facing, measuring 15cm x 4cm (6″x 1½″).

The embroidery

Work your chosen motifs on the boxes and yokes before starting the smocking.

☐ Prepare the centre panel for smocking on both the back and front (see Embroidery chapter 18, page 2222), working the top row of gathering stitches on each side of the opening and 2.5cm (1″) from the top edge of the fabric. Work the bottom row of gathering level with the bottom of the box.

☐ Draw up the gathering threads to reduce the fabric to the required width (ie the measurement across the shoulders).

☐ Work the embroidery on the prepared gathering.

☐ With right sides together place the yokes on the front of the smock so that the outer edges are level. Machine stitch taking 1.2cm (½″) turnings. Stitch the yokes to the back panel in the same way. Press the seams on to the yokes.

☐ Fold under the long edges of the yoke facings for 1.2cm (½″). Place the facings over the yokes on the inside of the smock so that the folds are level with the stitching lines. Hem in place. Tack the remaining two edges to the yoke.

☐ Stitch the side seams of the smock from the bottom edge to the bottom edge of the boxes. Press the seams open.

The collar and cuffs. To calculate the length of each collar section, measure from the centre front opening round the yoke to the centre back opening.

☐ Cut two rectangles of fabric to this measurement plus 2.5cm (1″) by 25cm (10″) wide.

☐ Fold each rectangle in half across the width and work a line of tacking along the crease line.

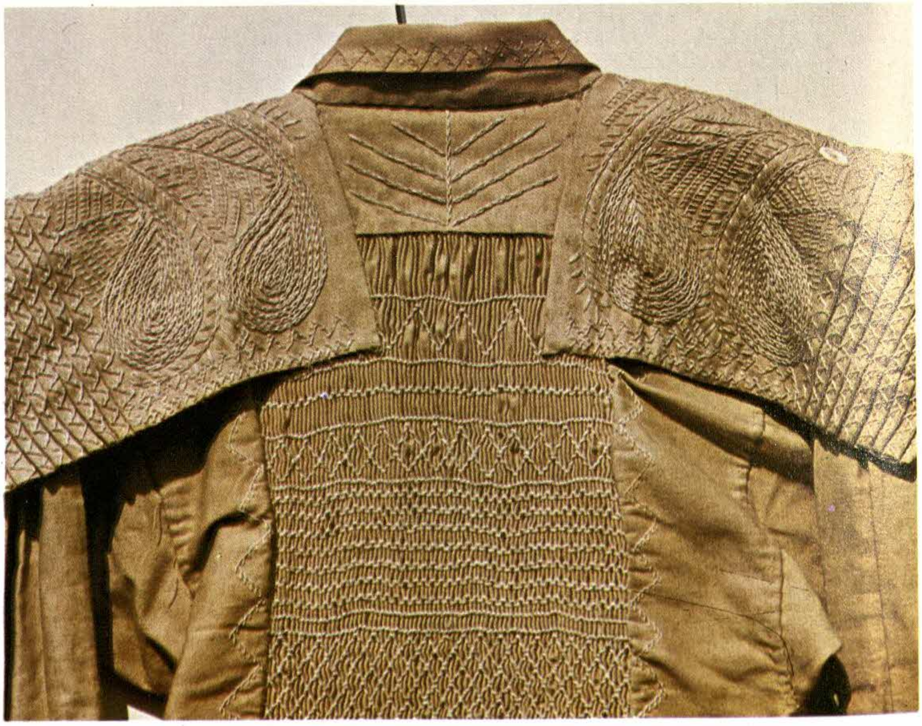
☐ Work the embroidery on half of each collar section, leaving 1.2cm (½″) clear at the edges for turnings.

☐ Mark the cuffs and embroider them in the same way.

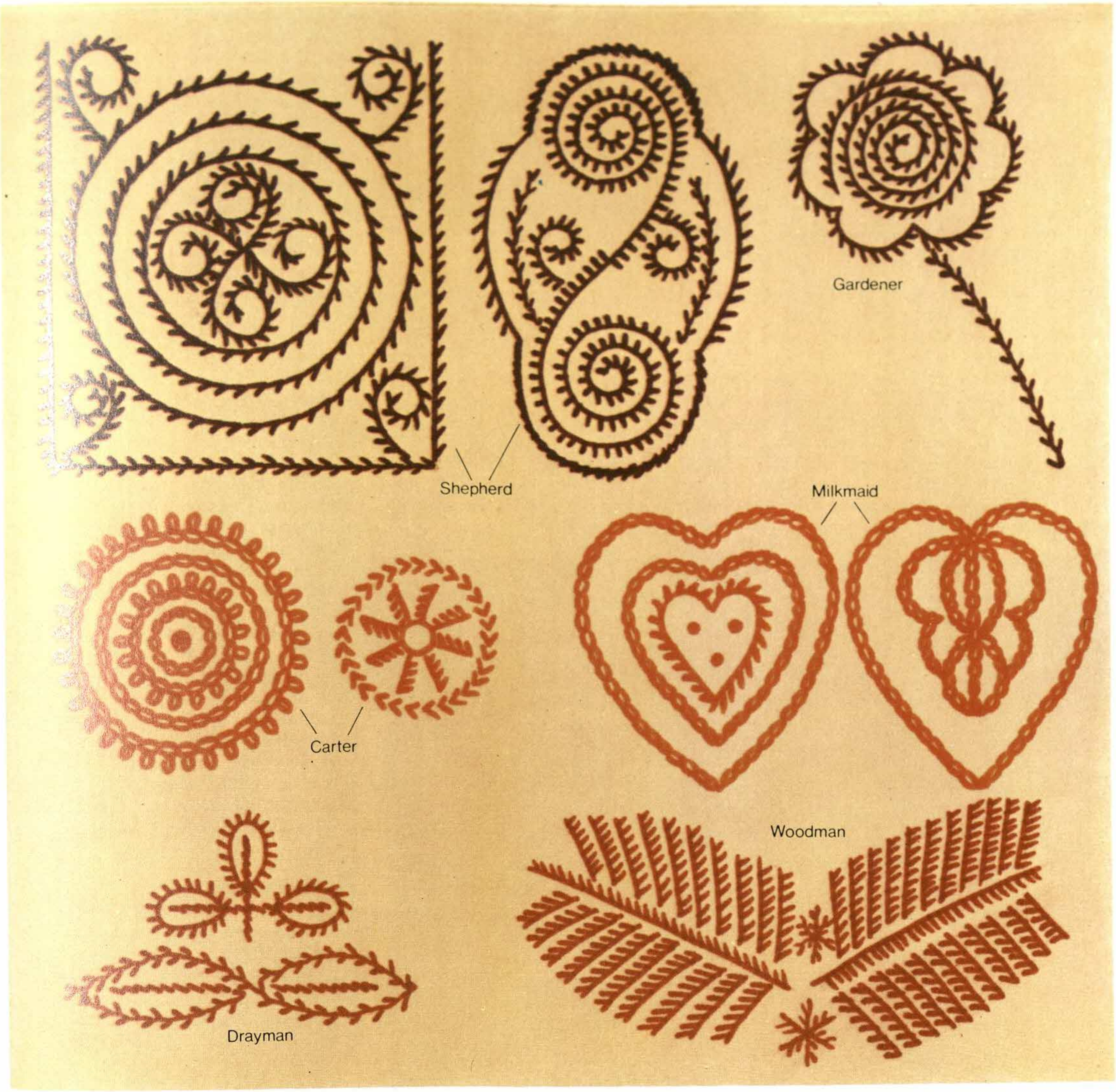
☐ Fold each collar section in half with the wrong side facing out and stitch the short ends together. Turn right side out and press. Repeat for the cuffs.

☐ Place the collar sections on to the smock with the embroidered halves facing up. Tack the under half only of each collar section to the top edge of the smock and machine stitch. Fold under the raw edge of the top half of the collar and hem it so that the fold is level with the stitching line.

Different style of smock with shoulder capes for weather protection.



Courtesy of Hereford City Museums



Coral Mula

Some of the many motifs which were used to decorate smocks.

The sleeves

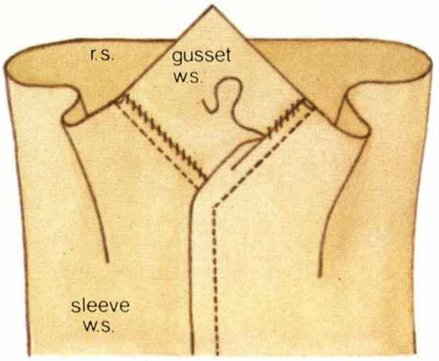
☐ Stitch the side edges of the sleeves together with a run and fell seam, leaving openings of 7.5cm (3″) at the bottom and 15cm (6″) at the top.

☐ Insert the gussets into the 15cm (6″) openings as shown in fig.3.

☐ Mark the centre of the top edge of each sleeve and the centre of the outside edge of each yoke.

☐ Pin one of the sleeves into one of the sleeve openings, working from the gusset up to within 2.5cm (1″) of the centre mark on the yoke in each direction. Mark the sleeves at these points with tailor's tacks.

☐ Unpin the sleeve and prepare the section between the tailor's tacks for a smocked band 2.5cm (1″) wide by 7.5cm (3″) deep. Prepare the top edge of the second sleeve in the same way.



3. *Inserting the under-arm gusset.*

☐ Leave a margin of about 4cm ($1\frac{1}{2}$″) at each side edge at the bottom of the sleeves, prepare the bottom edges for smocking to fit the cuffs.

☐ Work the smocking embroidery on the prepared gathers.

Finishing. Set the sleeves into the arm openings with run and fell seams. Fold under the turnings of the openings at the bottom edges and hem them. Place the cuffs, embroidered side down, on to the sleeves and stitch in a similar way to the collar. Work a buttonhole in each cuff and stitch on a button.

☐ Turn up the hem at the bottom of the smock.

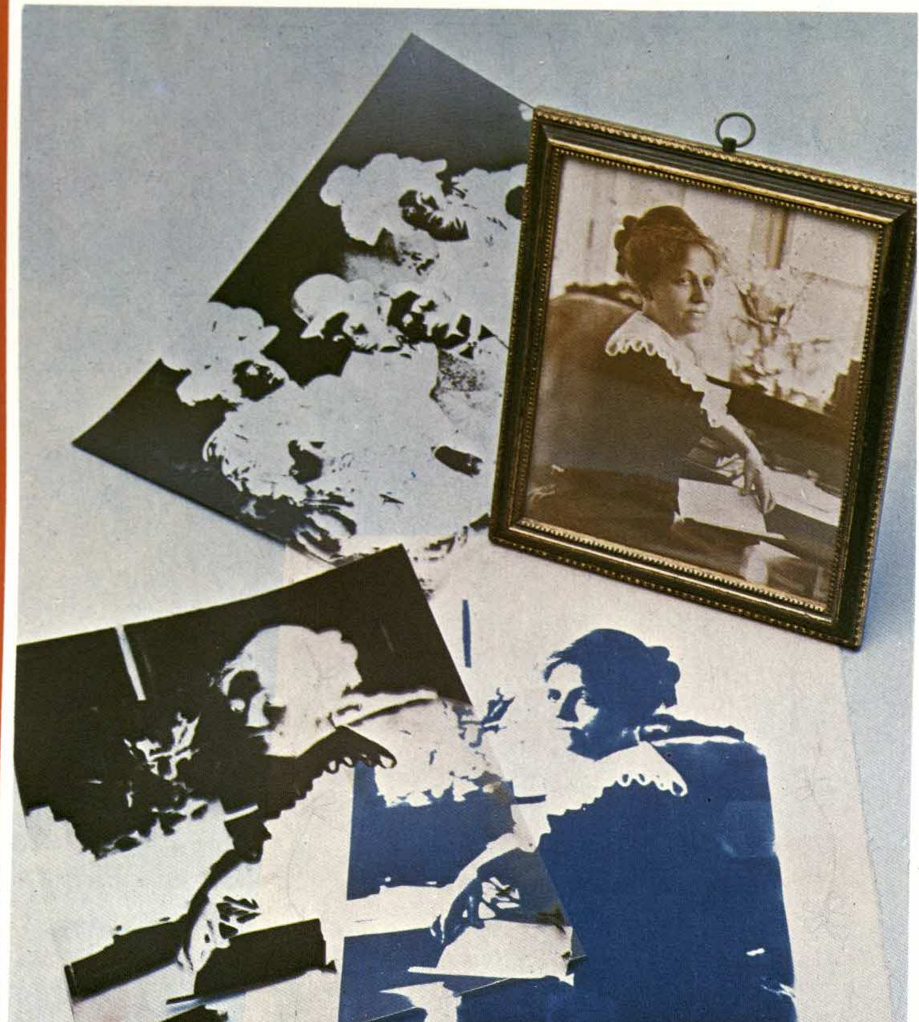
Printing photos on fabric

Cyanotype is a simple means of transferring photographic images on to fabric. The technique was originally used for making blueprint reproductions of technical drawings. It has been superceded in industry by other methods but may easily be practised in the home. The process involves transferring a standard negative on to a special line-film or half-tone film, which can be done professionally at most photographic laboratories.

To print the picture on cloth a chemical dye is painted on the fabric in the approximate area where the image is to be placed. The photographic negative is then positioned and exposed to light. This develops the print.

Uses

Patchwork is ideal for cyanotype because small pieces of fabric are used which are more or less the usual size of photographs.



Paul Kemp

For the quilt in the illustration, negatives from old photographs showing a family history were used. Some of the negatives have been embellished with hand-painted borders to add frames to the pictures.

Larger items such as T-shirts, bags, pillowcases and sheets, scarfs and cushions can also be printed.

The shade of blue obtained in cyanotype can look particularly effective if matched with denim. Patch pockets for jeans, matching bags or blouses could be designed and made up into an original outfit.

Fabrics to use

Cotton and viscose rayon are the most suitable fabrics for photo printing. The fabric should be washed very thoroughly in a little detergent, rinsed, dried and ironed. This ensures that the fabric is pre-shrunk and also removes all finishes and impurities which would otherwise inhibit the action of the dye. White fabrics give the best results as previously dyed fabrics do not often react well with the chemicals used in cyanotype. If anything other than a blue and white design is required, experiments should precede the final print to ensure that the chemicals will take on that particular colour fabric. Alternatively the print may be cold-water dyed on completion but there will always be a blue bias to the print. If a blue and white print is dyed pink the result would be pink and lilac, if dyed yellow it would be yellow and green.

Dark-room

A dark-room is essential for practising cyanotype. Any small room can be used provided that the majority of light is excluded at the windows and around the doors. This can be accomplished quite simply by hanging dark coloured fabric or paper across the windows and any cracks round the doors.

Negatives

Negatives made on special film must be used. These are produced from the negatives of any ordinary film. The two special films are called line-film and half-tone film.

Ordinary negatives should be transferred on to either of these films by a processing laboratory and at the same time enlarged to the required size.

Line-film. In an ordinary negative an image is reproduced in a range of tones.

Left: by using negatives made on special film it is possible to transfer a photographic image on to cloth.

Right: use photos from the family album to make an interesting patchwork quilt for a baby's cot.

Sandra Lousada

In line-film an image is reduced to black, white and texture. The darkest tones in the original negative are reduced to black, the lightest tones appear white and the medium tones are reduced to texture. This gives a striking, dramatic effect.

A half-tone film reduces the image to dots as in newspaper photographs. Each dot is black but in the dark areas the dots are very dense and in the light areas they are further apart thus giving an overall tonal picture and three-dimensional quality.

A negative is not harmed or altered in any way by this process and may be used any number of times.

Old photographs. If you wish to reproduce photographs but no longer have the negatives, the photographs may be photocopied on to line- or half-tone film by the laboratory.

Whichever method is chosen the higher the contrast in the original photograph or negative the more successful the transference will be.

Mixing the dye

Always wear rubber gloves when mixing the dyes as strong chemicals are involved.

You will need:

Rubber gloves.
2 brown glass chemical bottles.
A large glass or porcelain mixing bowl.
A plastic funnel.
6 teaspoons of ferric ammonium citrate crystals (available from photographic specialists) to be mixed with 85ml (3fl oz) water.
3 teaspoons potassium ferricyanide (available from photographic specialists) and 85ml (3fl oz) water.

☐ Dissolve the ferric ammonium citrate crystals in water in the mixing bowl.

☐ Using the funnel, transfer the solution into a brown glass chemical bottle.

☐ Thoroughly wash the mixing bowl.

☐ Mix the potassium ferricyanide with water in the mixing bowl and pour the solution into the other brown glass bottle using the funnel. The solutions must be kept separate at this stage because when they combine they become light sensitive. They should only be mixed when you are ready to dye the cloth in the dark-room. The solutions will keep separately for up to four months.

Dyeing the fabric

You will need:

Glass or porcelain mixing bowl.
5cm (2″) paintbrush.
Newspapers.
Dark-room.
Sufficient sheets of glass between which to sandwich the negatives, 3mm (⅛″) thick, with bevelled or thickly taped edges for safe handling.
White fabric.
A line-film or half-tone negative for each different image to be reproduced.
Ferric ammonium citrate solution.
Potassium ferricyanide solution.

☐ Cover a flat surface in the dark-room with newspaper and lay out the fabric to be dyed. For the best results it is advisable to restrict the number of pieces being dyed at one time.

☐ Mix the two chemical solutions in the dark-room, first making sure that as much light as possible has been eliminated. The two chemicals should be mixed in equal parts in the glass or porcelain mixing bowl. They will make a pale green-yellow solution, which is the dye.

☐ Using the paintbrush, coat the right side of the fabric with the chemical solution. Use even strokes from edge to edge.

☐ Cover the fabric with a dark cloth for added protection from extraneous light and leave the fabric to dry naturally. It will take an average of 1½ to 2 hours to dry.

Sandra Lousada

Cyanotype dyed fabric can be washed in soap and ironed or dry-cleaned.

Exposing the fabric

Still working in the dark, when the fabric is dry, place it coated side up on a sheet of glass.

Place the negative, emulsion (dull) side down on top of the fabric.

Place a second sheet of glass over the negatives to ensure a good contact.

Re-cover any remaining fabric with the dark cloth in the dark-room.

Once the fabric and negatives have been assembled between the glass, place them outside in the garden in direct light—preferably sunlight.

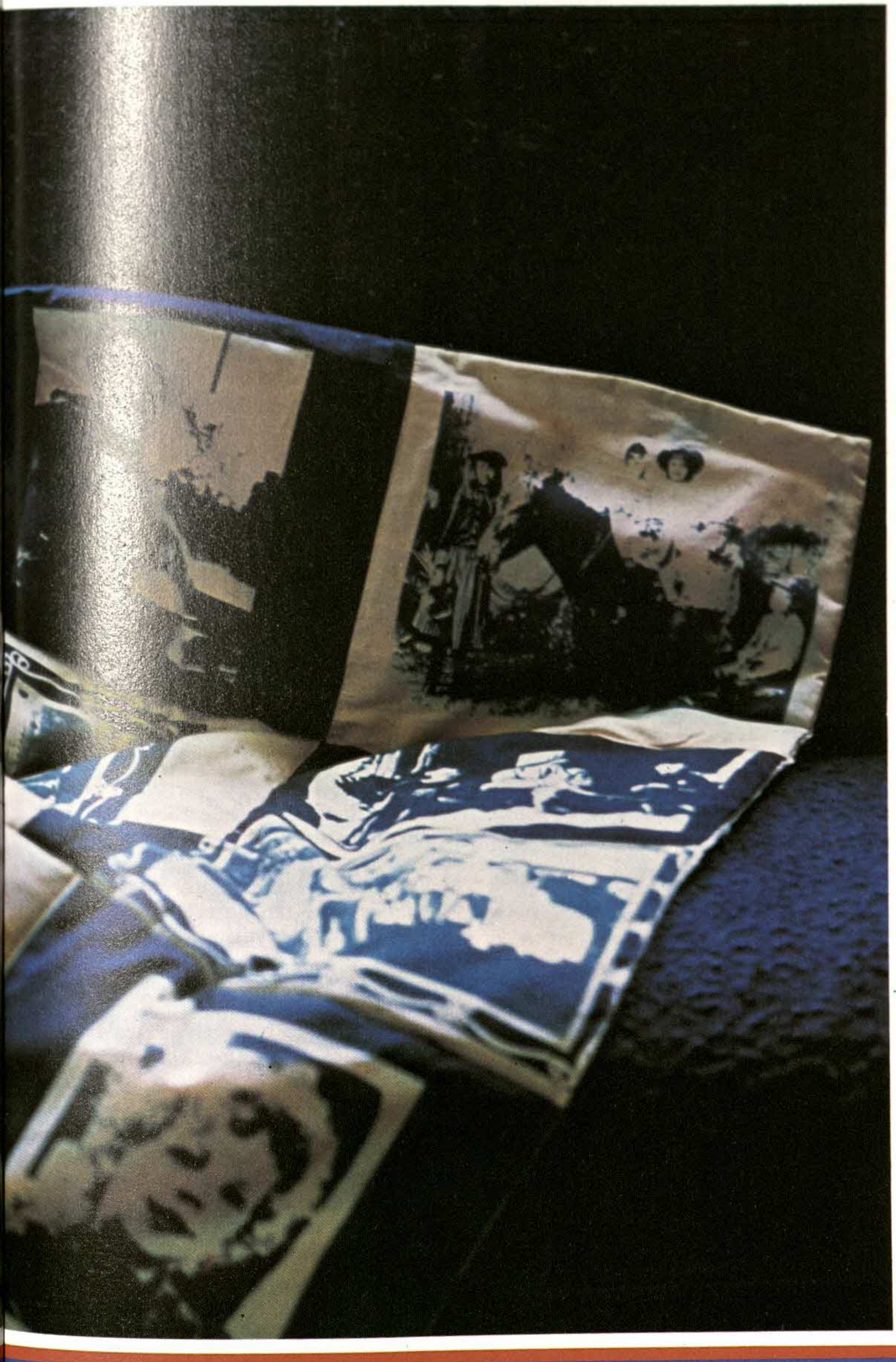
Those areas of the negatives which are clear allow the light to penetrate the dyed fabric beneath and cause a chemical reaction to take place. The areas of the negatives which are opaque prevent this. In the exposed areas the dye takes to the fabric and becomes fast, but in the unexposed areas it does not and may subsequently be washed off in lukewarm water, leaving the cloth its original colour.

When the exposed areas have turned a deep grey-blue the print is fully developed. The length of time this takes varies considerably according to the intensity of the sunlight and may take as little as five minutes on a bright summer day or as long as 40 minutes on a dull, cloudy day.

Finishing. After exposure the fabric must quickly be removed from between the glass and rinsed in lukewarm water for five minutes until all surplus colour has been removed. On the exposed areas a little of the colour will wash away leaving a clear mid-blue and white photographic image.

A negative is not harmed or altered in any way by this process and may be used any number of times.

After the prints are dry the fabric may be washed in soap and ironed or dry-cleaned without fear of losing the image. However, do not at any time use bleach.



Photograms

This is a photographic technique which can be used in conjunction with cyanotype. An object or group of objects is used in place of the negative. Opaque objects such as nuts and bolts or coins stop out the light completely and are therefore equivalent to the black areas of a negative. Semi-opaque objects such as flowers, feathers and cut glass partially stop out the light and are therefore equivalent to the mid-tones of a negative. Those areas surrounding the objects allow the light to penetrate totally and are therefore equivalent to the clear areas of a negative.

The objects must be placed directly on to fabric which has been dyed with light-sensitive chemicals as described previously. The procedure prior to exposure remains the same and should be conducted in the dark-room.

When dry, the fabric is placed right side up on one sheet of glass in the dark-room and the objects are then placed on the fabric. If you are using three-dimensional objects it will not be possible to cover the fabric with the second piece of glass. The fabric must be transported to sunlight with extra care so that the objects do not move out of position.

Interesting designs may be obtained by using this technique and it is most economical as the objects used can be found in any house or garden.

Using stencils

Using the same principle, stencils can be made for cyanotype by painting acetate with an opaque medium or by applying black paper shapes to the acetate. The black areas will be white in the final print and the clear areas will be blue. Stencils may be used on their own or with either photographic negatives or photograms—or all three may be combined. (To print several images using an acetate stencil see Printing chapter 17, page 1088.)

More decorative ways with shells

Shellcraft 3

Geoffrey Frosh

This intricate Victorian display incorporates a variety of shells.

Victorian ladies of leisure used to spend hours patiently making shell flowers from a great number of tiny shells. These arrangements, many of which still survive under glass domes, can be copied, but it is possible to produce attractive results more simply. Shells which are translucent lend themselves particularly well to use in three-dimensional objects such as flowers or lampshades, because light can pass through them easily.

The different shapes of shells can be used for different parts of a flower arrangement. Flat shells make ideal petals which can be wired or glued to one another at their hinges. They can also be used to form a base for a flower—a container to hold a small amount of cement filler such as Polyfilla in which small shell 'petals' are embedded. Coiled shells and cowries can be used for buds when mounted individually on wire stems. Pointed shells and razor shells can be wired and used as bulrushes. Different types of coral can be used to represent foliage.

When you have selected a number of shells for use in a particular arrangement, you may wish to colour them. Lacquer paints of the type used for modelling are suitable, either to colour the whole shell or part of it. Another way of colouring shells is to dip them into a pan of boiling fabric dye and water until the colour has been absorbed. More detailed information about painting and dyeing shells is given in a later chapter.

Floral lampshade

A functional as well as unusual way of using large shells such as scallops is to make a lampshade like the one shown opposite. Resembling a flowering water-lily the wrong way up, it is surprisingly easy to make and is much more robust than it looks.

You will need:

Three scallop shells, each about 12.5cm (5″) in diameter.

Twelve quin or 'queen' shells, six of about 7.5cm (3″) in diameter, and six of about 6.5cm (2½″) in diameter.

One light fitting of miniature 'bayonet' type.

One 40 watt spherical miniature 'bayonet' bulb.

Epoxy resin adhesive such as Araldite.

Adhesive tape such as masking tape.

Hack saw.

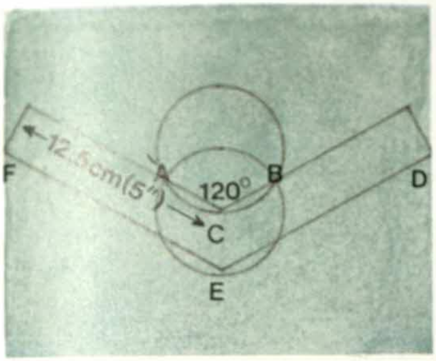
File, coarse wet and dry paper.

A piece of thin card, at least 20.5cm sq (8in sq) from which to make a template.

Pencil, ruler, pair of compasses, scissors.

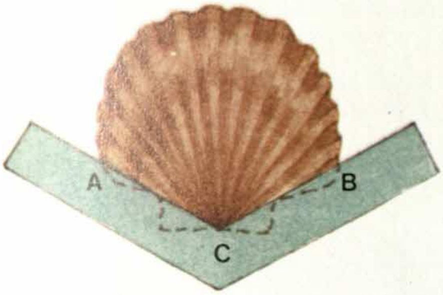
In order to shape the three large scallop shells (which form the top part of the shade, the 'leaves' of the lily) so that they fit well together, first make a template from the thin card.

☐ Using the compasses, draw a circle with a radius of about 2.5cm (1") on the card. Draw a second circle of the same radius with the point of the compasses on the circumference of the first circle (fig.1). With a pencil, draw two lines, joining the points at which the two circumferences intersect each other (A and B) with the centre of the first circle (C). The angle formed is 120°. Extend the two lines forming the angle to about 12.5cm (5") each, and cut along them and lines parallel to them (lines DE and EF in fig.1), to form a template.



1. *Draw a template with a 120° angle.*

☐ Place the template over the back (convex side) of each shell in turn (fig.2), with the 120° angle placed centrally on the edge of the hinge. Draw on the shell along the lines AC and BC.



2. *Place the template over each shell.*

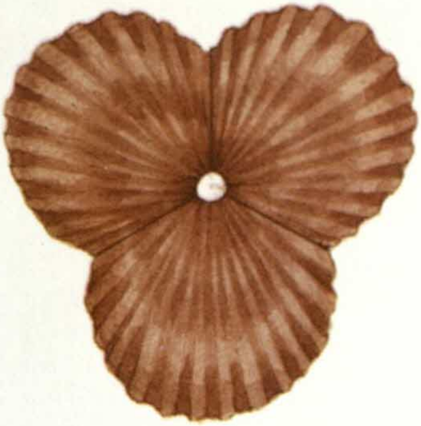
☐ Using a hack saw, saw each shell to shape along these lines, resting the shell on the edge of a table and holding it firmly. (Do not attempt to place the shell in a vice when sawing or it will crack.) File the edges smooth.

☐ Finish the sawn edges with coarse wet and dry paper. Place the paper, abrasive side up, on a work surface, wet it thoroughly with water and move the edges of the shell backwards and forwards across it, using medium pressure. This will ensure a smooth edge and a good fit with the other two shells when they are assembled.

Jerry Tubby

Large scallops and quin shells are used effectively to make a pretty lampshade. Designed by Jerry Tubby.

☐ Place the three scallop shells, convex surface uppermost, in a circle with their hinges towards the centre and their edges aligning. Then draw a circle at their centre large enough for the lamp fitting to pass through it, but not so large that the threaded ring, which normally retains a lampshade, passes through as well. File away the area within the circle on each shell (fig.3).

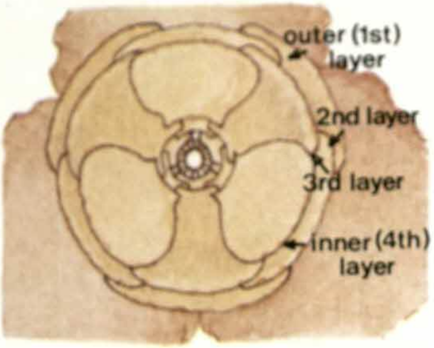


3. *Position of the scallop shells.*

☐ Apply epoxy resin adhesive to the straight edges of each of these shells and glue them together in a circle (see fig.3). Secure them in place with adhesive tape until the glue is dry.

☐ Glue the retaining ring to the centre of the three shells on their concave surfaces, so that it frames the central hole. Leave to dry.

Fig.4 shows how to assemble the 'petals' of the lily.

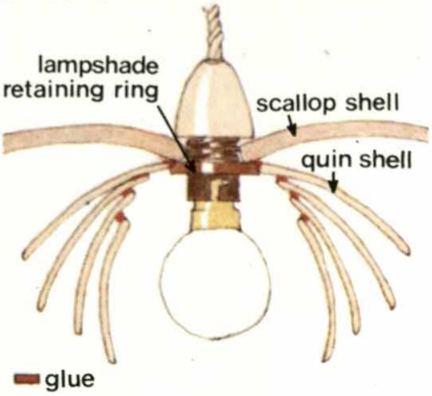


4. *Position of the quin shells.*

☐ First take three of the 7.5cm (3") quin shells and, with the concave surfaces of all the shells uppermost, glue them to the 'leaves' in a circle round the threaded ring. Secure with masking tape and leave to dry.

☐ When these shells are firmly attached to the scallops, the second layer of 'petals' can be added. Glue three more quin shells of 7.5cm (3") diameter centrally over the gaps between the shells in the previous row and with their hinges about 5mm (¼") away from the threaded ring. Secure as already described and leave to dry.

☐ The third and fourth rows of 'petals' are added in the same way. Each row consists of three quin shells of 6.5cm (2½") in diameter. The shells in each row are placed centrally over the gaps between the shells in the previous row, and progressively farther away from the threaded ring. The petals will hang about 7.5cm (3") below the leaves formed by the scallop shells, as in the photograph and fig.5. The diameter of the space at the bottom of the shade, through which the light bulb will shine, should also be about 7.5cm (3").



Alan Fleming

5. *Assembled lampshade and fitting.*

☐ When the glue is completely dry on all parts of the lamp, wire up the fitting, fit the 40 watt bulb and switch on. The lamp will throw a soft light and the colours of the shells will glow with a delicate translucency.

Three flowers

The three flowers in the photograph resemble a dahlia, a poppy and a bulrush. You could make several of each of these and arrange them all together in a vase, or separately.

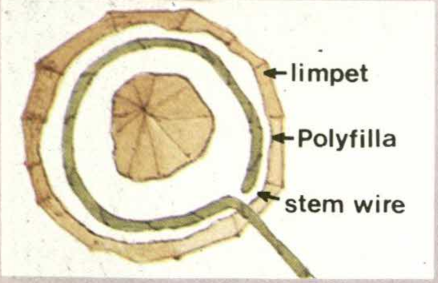
You will need:
One double razor shell.
Seven banded tops or similarly shaped univalves.
One large limpet.
One small limpet.
Seven small scallops.
A cement filler such as Polyfilla, mixed with water to a pliable paste.
Six floral stem (stub) wires.
Thin floral binding wire, at least 1.5m (5′) long.
Gutta-percha, scissors, a pointed instrument such as a pair of compasses.
Lacquer paint such as Humbrol's modelling paint and brushes (optional).

To make the 'bulrush', cover a stem wire with gutta-percha (this is floral tape which sticks to itself) and then bend the top of the wire to form a hook about 5cm (2″) long.

☐ Open the two valves of the razor shell carefully and put a teaspoonful of Polyfilla paste inside one end of one valve.

☐ Embed the hooked end of the wire in the Polyfilla paste and close the shell. If necessary, twist a piece of binding wire round the shell to hold the two valves together until the Polyfilla paste has dried.

To make the dahlia, cover a stem wire with gutta-percha. Take the large limpet and coat its outside with a liberal amount of Polyfilla paste. Bend one end of the wire round to make a loop which is slightly smaller than the diameter of the limpet. Embed the loop in the Polyfilla paste on the limpet (fig.6).



6. *Embed wire in Polyfilla on limpet.*

☐ Arrange seven banded tops round the limpet, pressing them into the Polyfilla paste so that they are evenly spaced and with their pointed ends facing outwards.

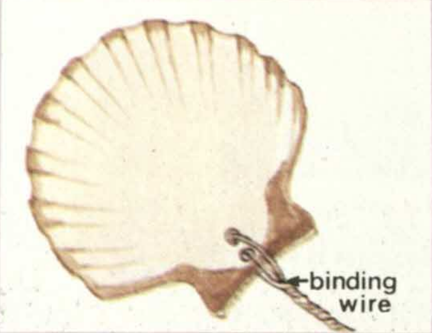
☐ Place a small limpet over the centre of the flower, on top of the large limpet. Leave to dry.

☐ Take one more stem wire and bind it to the first looped wire with gutta-percha. You will find that the weight of the flower head requires this extra support.

To make the 'poppy', take the seven scallop shells and, if you wish, paint the edge of each shell. The flower has seven shell petals.

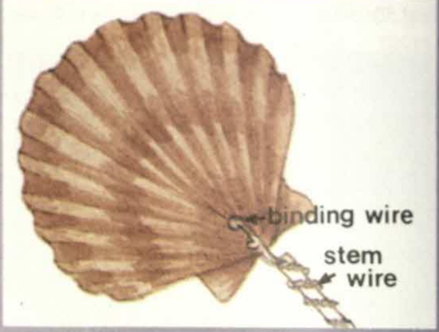
☐ Using a pointed instrument such as the sharp end of a pair of compasses, make two holes one above the other in the base of each shell.

☐ Cut 14 lengths of binding wire, each about 10cm (4″) long, two for each shell. Thread one length of wire through the top hole of one of the shells and another length through both holes. Pull the ends through until they are level and twist them together (fig.7). Repeat the process with the other scallops so that they all have short twisted wire stems.



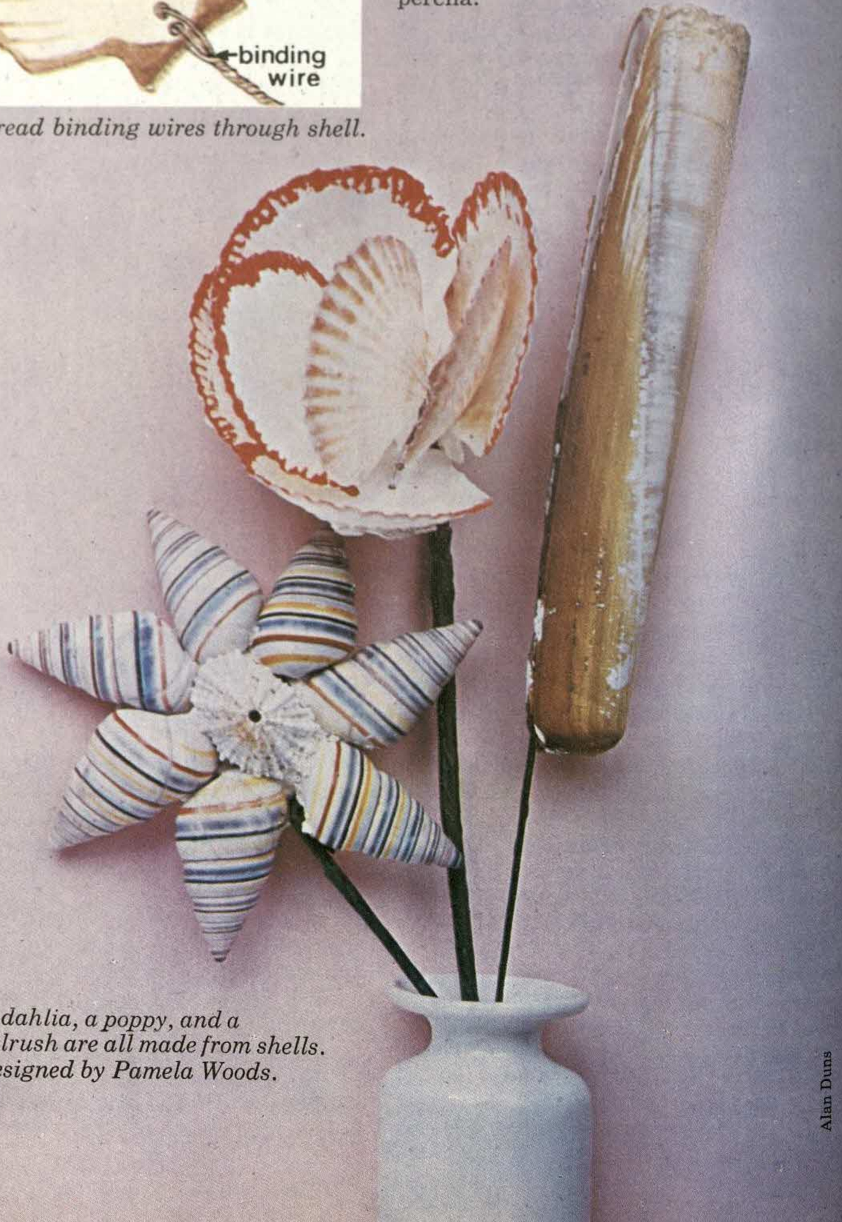
7. *Thread binding wires through shell.*

☐ Twist the thin wires on one shell round one end of a stem wire (fig.8).



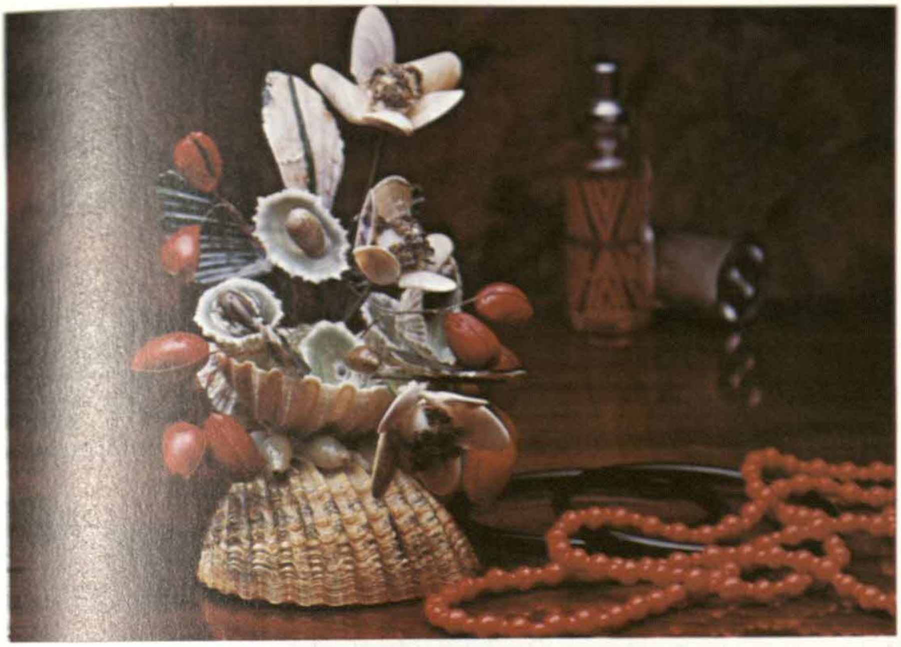
8. *Attach binding wires to stem wire.*

Add the other six shells to the stem wire in the same way, arranging the seven shells so that they are evenly spaced with three shells in the centre and four outside. Place two more stem wires beside the first stem wire and bind them all together with gutta-percha.



A dahlia, a poppy, and a bulrush are all made from shells. Designed by Pamela Woods.

Alan Duns



Two cockle shells form the base for this arrangement. Designer Pamela Woods.

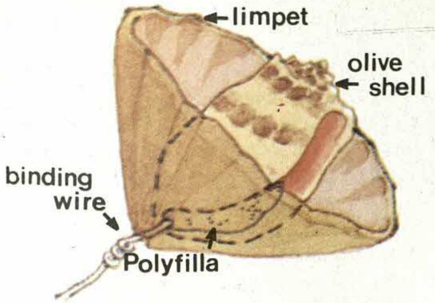
Cockle shell design

This incorporates two cockle shells which are used as a base.

You will need:
15 small wedge shells, and tiny abalone chips, seven keyhole limpets (which have a hole in the centre), five pieces of scallops, 19 cowries and two cockles. Seven olive shells.
Three compressed cotton wool balls, which are known as 'puffballs'.
Green and red lacquer paint, brushes.
Glue, Polyfilla paste, Oasis, Oasis fix.
Stem wires and binding wire about 3m (9′) long, gutta-percha. Hack saw.

To make a five-petalled flower, cover a stem wire with gutta-percha and glue it to a puffball. Coat the ball with glue. Press the backs of the wedge shells round it to form petals; press abalone chips in the centre to cover the puffball. Make three of these flowers.

To make the limpet flowers, cut a 15cm (6″) length of binding wire and fold it in half. Put some Polyfilla paste into the cleft of an olive shell and press the fold of the wire into the shell. When the Polyfilla paste is dry, thread the ends of the wire through the limpet from the inside and make a twist at the back of the limpet to secure it in position (fig.9), before straightening the rest to use as a stem. Make seven of these flowers.



9. *Thread the wire through the limpet.*

To make the 'leaves', use a hack saw to trim the scallop pieces to leaf shapes. Cover five stem wires with gutta-percha and glue one to the back of each leaf shape. Paint each leaf green with lacquer paint.

To make the cowrie sprays, use 11 cowries. Cut 11 15cm (6″) lengths of binding wire and wrap one round each shell (fig.10), twisting the ends together to form the stems. Dip each one into the paint and leave to dry. Assemble into three sprays of three shells and one of two by simply twisting the ends of the binding wire together.

Alan Fleming

10. *Wrap wire round each cowrie.*

To make the container which holds the flowers, take the larger cockle and put a large blob of Polyfilla paste on its apex. Place the remaining cowries in a circle round the edge of the paste and set the other cockle in their centre, concave side up on top of the first cockle. Fix a piece of Oasis with Oasis fix to the centre of the second cockle and push the stems of the flowers into it, to form a pleasing arrangement.

Nacreous shells of various kinds make a beautiful flower decoration.

Maison de Marie Claire/Chanabeix

Painting with oils

Design know-how 80

Painting with oils will be much easier if you first arm yourself with some basic rules and procedure to follow.

The support (painting surface) of canvas, wood or paper, is discussed in the previous Design know-how chapter. It should now be ready to receive the paint.

You may have bought a ready-prepared canvas, but these are expensive and it is well worth preparing the support yourself.

The primed support is generally white or pale cream. You can paint straight on to this, but some artists prefer to stain their canvasses to a neutral middle tone before beginning to paint. Staining a canvas involves smearing a mixture of yellow ochre and black paint on to the surface of the canvas. The best way of doing this is to place the support on to a flat surface, put specks of black and yellow ochre all over the primed surface, pour some turpentine on to the support and rub all over with a rag. Very little paint and a lot of turpentine will produce the translucent stain required. After staining, wipe the support with a rag to remove excess paint.

The subject. For your first oil painting it is best to choose a very simple subject—one flower in a vase would present quite enough problems for the beginner—choosing a too ambitious project could put you off altogether. Arrange the subject with the light coming from one side so that some interesting shadows are cast.

Make some preliminary sketches of the subject so that you can make certain decisions about the painting before you start. Then you can either transfer one of these sketches to the canvas using the technique explained in Design know-how chapter 4, page 112, or paint straight on to the bare canvas. Before you start to paint, organize your equipment.

The palette. This can be any flat, non-absorbent surface of any shape, not necessarily the traditional wooden, oval hand-held palette. If you have a Formica or marble-topped table, you could use this as your palette.

The purpose of the palette is for mixing paints, so first of all put a selection of colours round the edge of the palette and leave room in the middle for mixing. Every artist has his own personal preference as to what colours to put out but a fairly average selection would be flake white, cadmium yellow, golden ochre, cadmium red, ultramarine, cerulean blue, cobalt blue, viridian, cobalt green and black.

A palette with small amounts of paint put out ready for mixing is quite unsuitable if large quantities of paint must be mixed at one time. In this case a series of jam jars would be more appropriate.

Paul Kemp

Have a pot of turpentine and a pot of linseed oil handy and also tubes or bottles of the other mediums you will be using.

Brushes and painting knives. There is a vast selection of brushes available to the artist, but choose large and medium sized brushes. Small brushes may tempt you to put in too much detail. Oil painting brushes are usually made of hog hair which is stiff enough for manipulating thick paint. (For more on brushes see a later Design know-how chapter.)

An alternative to brushes is painting knives. These are available in different sizes and are usually used to apply thick layers of paint, or create textures.

Starting to paint. The first thing to do is to put in flat areas of light and shade to establish a tonal relationship between the different areas of the painting. Do not put in detail at this stage—work in broad areas and concentrate on the light, shade and tone.

When you have sorted out which areas are lighter and which darker, start to put in the colour. Divide each surface into areas of different shades and colours. Do not concentrate on detail, use a large or medium sized brush and work simply. Cover the whole painting as soon as possible, always considering the painting as a whole and not concentrating on one area, otherwise you may find the painting does not hold together when it is finished.

One of the great advantages of using oil paint is that if you decide you want to change a colour you have used, the paint can be scraped off the canvas and the area repainted.

Effects. Oil paint can be used in many different ways to create different effects. For example, impasto is a technique of using very thick layers of paint, often very textured and applied with a painting knife. A glaze is a very thin layer of translucent paint used over white or pale grey. This gives the colours a luminous quality caused by the white paint underneath which reflects light through the coloured glaze. Experiment with the paint to produce different textures and effects.

When you think you have finished the painting, leave it alone for at least a day, and then have another look. You will probably see parts of the painting that could be improved upon which were not evident before.

To store paint that you have left over when the painting is finished, scrape it from the palette on to a piece of glass and immerse in a jar of cold water.

Clean your brushes immediately in turpentine and then soap and water. If you let the paint dry on the brushes they will be very difficult to clean, although special solvents are available.

Transworld

Creative ideas 82

Garden stakes

Define vegetable growing areas in the garden with these distinctive stakes.

For each stake you will need:

Piece of pine 20cm x 20mm (8″x $\frac{3}{4}$″) and 23cm (9″) long.

Softwood beading 20mm x 12mm ($\frac{3}{4}$″x $\frac{1}{2}$″) and 90cm (3′) long.

Medium and fine grade glasspaper, wooden mallet, power jig saw with accessories or coping saw.

6mm ($\frac{1}{4}$″) and 25mm (1″) chisels.

Wood stain (colour optional), white matt emulsion, coloured gloss paints.

Paintbrushes, carbon and graph paper, sharp pencil, small, soft bristle brush.

Two 20mm ($\frac{3}{4}$″) screws 25mm (1″) long.

Screwdriver, polyurethane varnish.

Using the mallet and 6mm ($\frac{1}{4}$″) chisel, make a straight-sided channel on the pine.

Enlarge the scroll outline and a selected vegetable design on graph paper. With carbon paper trace both on to panel.

Cut out scroll outline with power jig saw or coping saw.

With 6mm ($\frac{1}{4}$″) chisel and mallet, outline vegetable, including details such as veins of leaves and vegetable sections. Make cutting deep enough to be noticeable—about 2mm ($\frac{1}{16}$″).

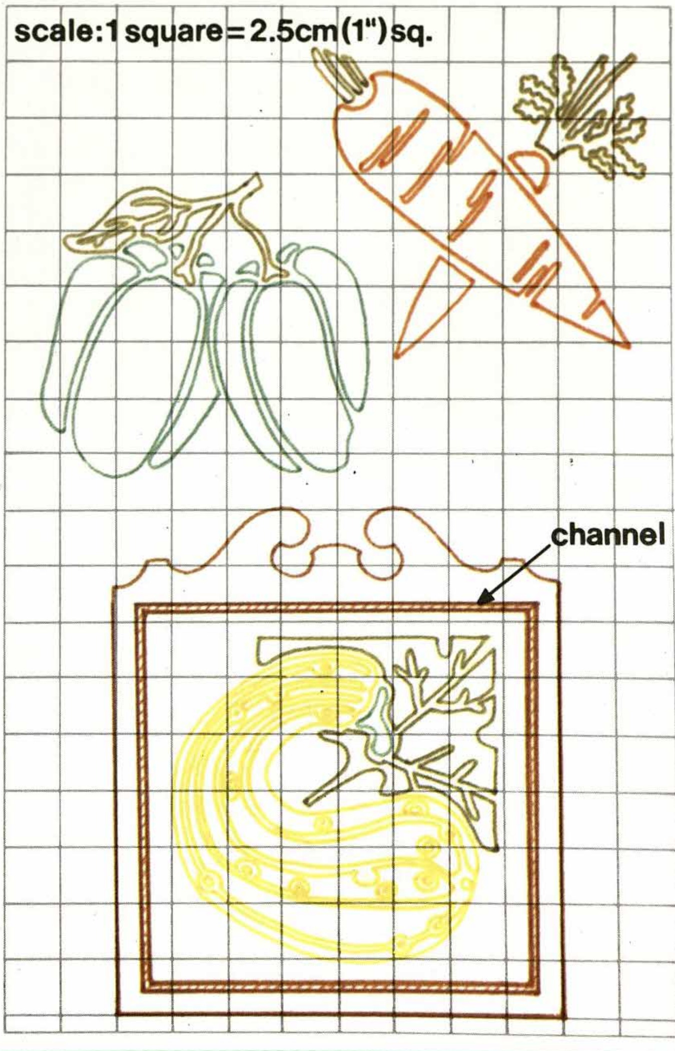
With 25mm (1″) chisel, gouge out 5mm ($\frac{3}{16}$″) of background area (from vegetable outline to channel). A digging motion will create an attractive rough texture. Smooth down vegetable with glasspaper and work over background lightly (but do not destroy roughness).

With bristle brush, apply wood stain to cover entire panel—following manufacturer's instructions. Paint vegetable with white emulsion. When thoroughly dry, paint with gloss paints.

Shape each end of beading to a point.

Smooth down and stain. Screw beading to panel at top and bottom of scrolled border, with about 10cm (4″) projecting above top.

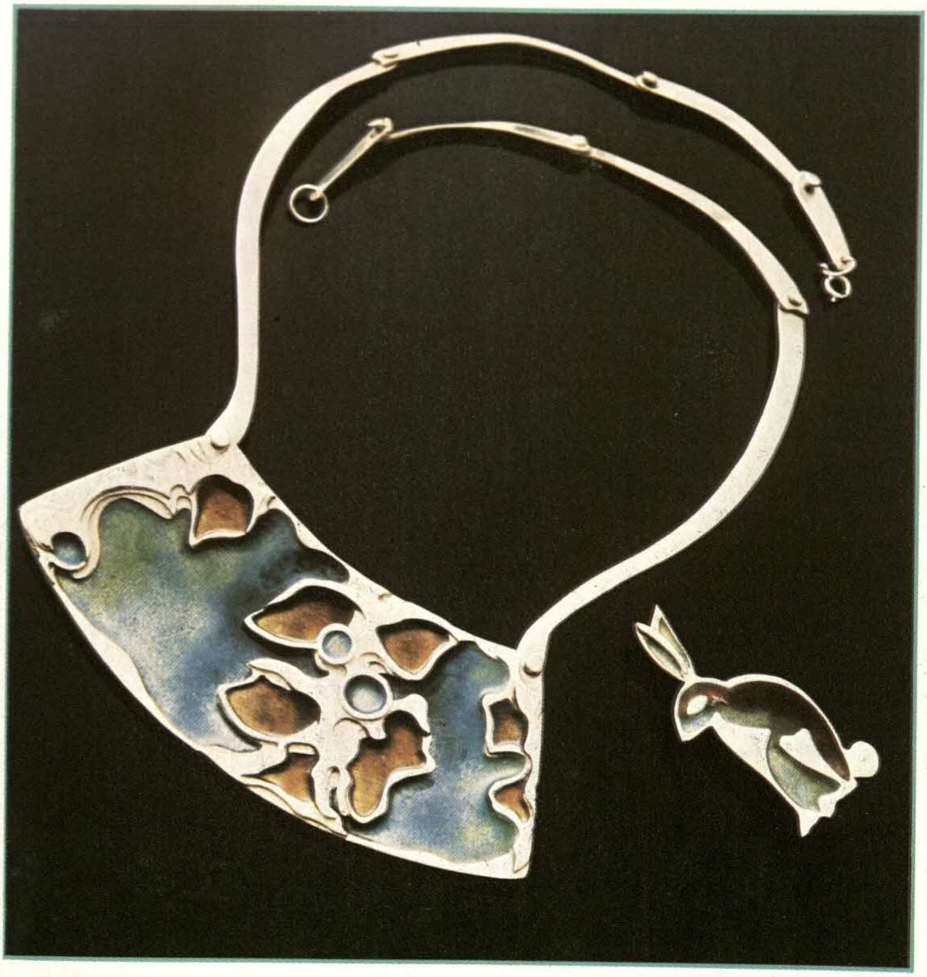
Complete stake with a protective coating of polyurethane varnish.



Alan Fleming

Enamelling on silver

Enamel 13



Kim Sayer

'Pools' necklet and rabbit brooch in fine silver designed by Pat Johnson.

Fine (pure) silver, Brittania silver (an alloy of 958 parts silver and 42 parts copper) or sterling silver (an alloy of 925 parts silver and 75 parts copper) can be used for enamelling, but sterling silver, because it is not pure silver, develops dark grey patches, called fire stain, when it is heated in the kiln. These patches have to be rubbed off with wet and dry paper—a tedious, time-consuming task.

Brittania silver is less liable to fire stain than sterling silver.

Avoid using scrap silver from an unknown source as some silver alloys have cadmium added which gives off toxic fumes when heated. Sheets of fine silver, Brittania and sterling silver do not usually have cadmium added.

Enamelling on silver is different from enamelling on copper as silver is a softer metal. Because of this, the metal is sometimes inclined to warp in the kiln, causing the enamels to crack. Also it is a shame to completely cover a beautiful metal such as silver with enamel, so designs usually feature exposed silver.

A major rule concerning enamelling on silver is that the edge of the enamel must be protected by a border or rim of metal soldered into place. This border prevents the enamel from chipping away at the edge and helps to prevent the silver warping. If the border also works as part of the design, so much the better. The jewelry in the photographs illustrates the use of a practical and decorative border.

Note: the most practical border is one which is fairly even in width.

The solder. When soldering silver which is to be enamelled later, and thus exposed to a high temperature in the kiln, use hallmarking quality silver, enamelling solder or hard silver solder. These have a high melting point so they should not run when the enamel is fired. Enamelling solder is the best to use as it has the higher melting point of the two. (The melting point of enamelling silver solder is 730°C-800°C (1346°F-1472°F) and the melting point of hard silver solder is 745°C-778°C (1373°F-1432°F).

Hallmarking quality silver solders do not usually have cadmium added.

Soldering flux. This is a substance that prepares the metal surfaces for joining. It also helps the molten solder to flow smoothly. Borax is usually used as the flux for silver enamelling solder and hard silver solder. It is a white powder which is mixed with water to the consistency of cream and painted on to both surfaces to be joined by the solder. Avoid getting borax near the eyes.

As an alternative, you can use one of the special-purpose commercial products. Ask the dealer for a high temperature flux for hard silver soldering. Follow manufacturer's instructions when using these fluxes.

Note: do not confuse the flux used for soldering with flux enamel. Flux enamel is a colourless transparent enamel which forms a clear base on which to fire transparent coloured enamels (Enamel chapter 3, page 274).

Blowtorch. A blowtorch with an adjustable flame is suitable for soldering silver jewelry.

Always work on a fire-resistant surface. Work in a well-ventilated room.

Pickle. When the piece has been soldered it must be placed in a pickle of one part concentrated sulphuric acid to eight parts water in order to remove all traces of borax before the work can be enamelled.

Concentrated sulphuric acid can be obtained from chemists. The chemist may do the diluting for you but if you have to do it yourself *always* add acid to water and not the other way around—this is most important when dealing with sulphuric acid.

Treat this pickle with great respect and take the same precautions when handling it as described for handling nitric acid (Enamel chapter 12, page 2200).

Sulphuric acid retains its strength for a very long time.

When putting the silver into the pickle, or when taking it out, hold it in plastic, copper or brass tweezers, not iron or steel tongs. Iron and steel will ruin the pickle and any silver subsequently pickled will come out dull grey and have a most unpleasant texture.

Plastic is the best material for tweezers as copper and brass will, in time, be eaten away by the acid (the plastic forceps sold by photographic suppliers are suitable for this purpose).

After pickling, the piece must be rinsed thoroughly under running water.

The enamels used on silver are usually the transparent ones which allow the metal to be seen through them (see Enamel chapter 3). The enamels are applied in thin layers, each layer being fired separately, starting with a silver grade transparent flux. (By applying the enamels in thin layers you can obtain subtle shadings in the colouring.) After the transparent flux, it is best to put on the light colours first and then the darker colours in successive layers.

If you prefer, you can use just one colour on a piece. In this case first apply and fire a thin layer of transparent flux and then fire successive thin layers of one colour. Alternatively, after the flux, fill the whole area within the border with one colour, topping up as necessary in the way described for *cloisonné* (Enamel chapter 11, page 2174).

If desired, the enamel can be left below the level of the border.

Note: you will find that reds and pinks tend to darken to browns on silver. It is best to fire these colours last.

Making a small brooch

The instructions here are for the rabbit brooch in the photograph but you can adapt them to any small design.

You will need:

Equipment as for cutting copper with a piercing saw (Enamel chapter 10, page 2148).

Enamelling equipment as described in Enamel chapter 1, page 106, plus a stilt.

Materials. Piece of .71mm (21-22 gauge) fine silver, more than twice the size of the finished brooch.

Acid-resistant vessel with a lid for pickle, such as old oven-proof glass casserole.

Metal tongs, glue, paper and pencil.

Plastic, copper or brass tweezers, or plastic forceps.

Blowtorch with adjustable flame, such as Ronson's Variflame.

Fire brick.

Sulphuric acid (handle with great care).

Silver brooch fastening.

Borax or other suitable flux.

Soap-impregnated steel wool.

Silver grade, transparent flux enamel powder.

Transparent enamel powder in chosen colours.

Wet and dry paper—from finest grade (800) up to 600 grade.

Polishing grade emery paper 2/0, 3/0 and 4/0 (if available).

Non-abrasive silver polish, such as Silvo (optional).

Tripoli and rouge (optional).

Silver cleaning brush or soft nail brush.

Glass brush (fig.1) sold by jewellers' suppliers (if available).

Electric jewelry polishing machine (optional).

Paintbrush.

Absorbent kitchen paper.

Two pieces of chamois (optional).

Soft cloths for polishing.

☐ Draw out the shape of the border and rabbit's eye on paper and stick the paper to the silver.

☐ Cut out the shapes with the piercing saw (Enamel chapter 10) and then wash off the paper template.

☐ Place the eye face downwards on the base of the stilt. Place the stilt on a fire brick.

☐ Paint eye with flux and place a snippet of solder on top of it. (It is best to flatten the solder with a hammer first so that fine snippets can be cut off easily.) Then, using the blowtorch with a low flame, melt the solder on to the eye.

Any wide areas of the border, in this case the rabbit's thigh, should also be treated in this way.

☐ The next step is to solder the border to the remaining piece of silver which will form the base. Place the border on the remaining piece of silver and, with a pencil, draw round the inside and outside edges of the border.

☐ Paint the underside of the border and the area within the pencil lines on the base with flux. Do not use too much flux and do not take flux right up to the inside line to avoid solder running on to exposed area of base.

☐ Lay the border right side up, inside the drawn outline, on the piece of silver which will form the base. Cut snippets of solder as before and lay these along the *outside* edge of the border (fig.2).

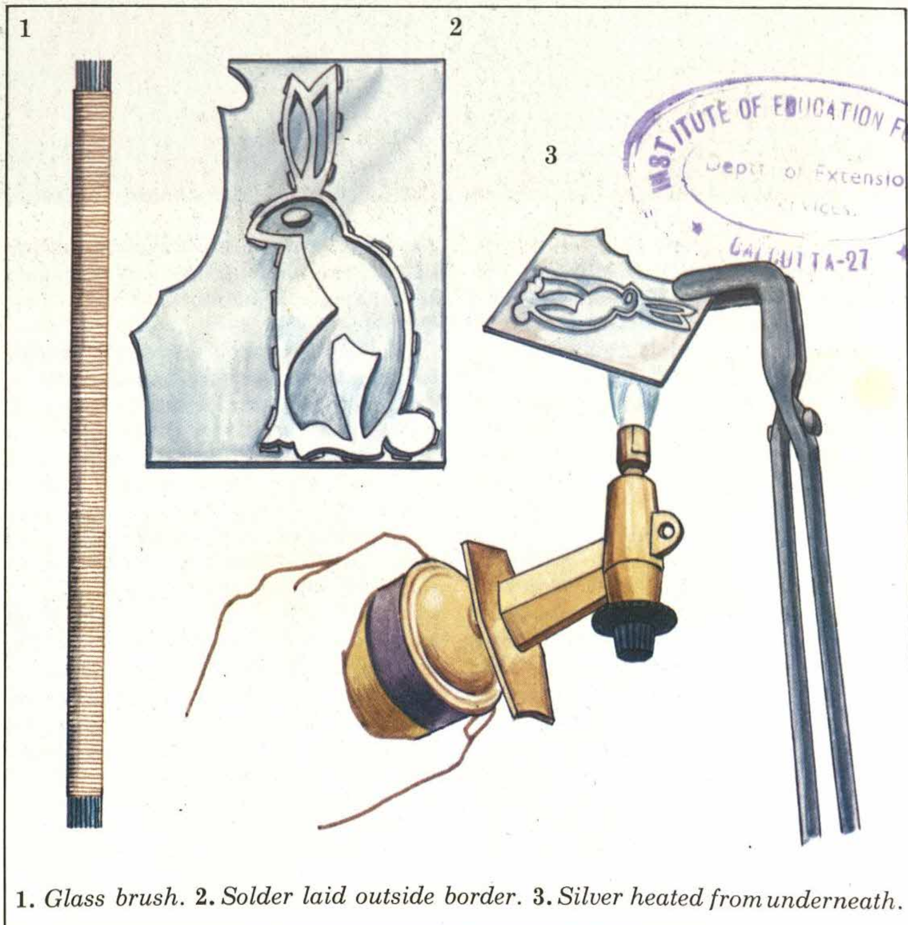
☐ Lay in any extra details, in this case the eye, right side up, having first painted a spot of flux on to the back of it.

☐ Make up pickle in glass bowl, by adding one part acid to eight parts water. (Do not add water to acid as this will cause dangerous splashings.)

☐ Pick up the base piece of silver with the border on top. Do this by grasping a protruding edge of the base with a pair of tongs. Then gently heat the whole area of silver from underneath with the low flame of the blowtorch (fig.3).

☐ Gradually increase the heat until all the silver begins to glow pink and the solder runs.

You will find that the solder underneath the eye and the thigh will melt and stick it to the base (this process is called 'tacking').



1. *Glass brush.* 2. *Solder laid outside border.* 3. *Silver heated from underneath.*

Barbara Firth

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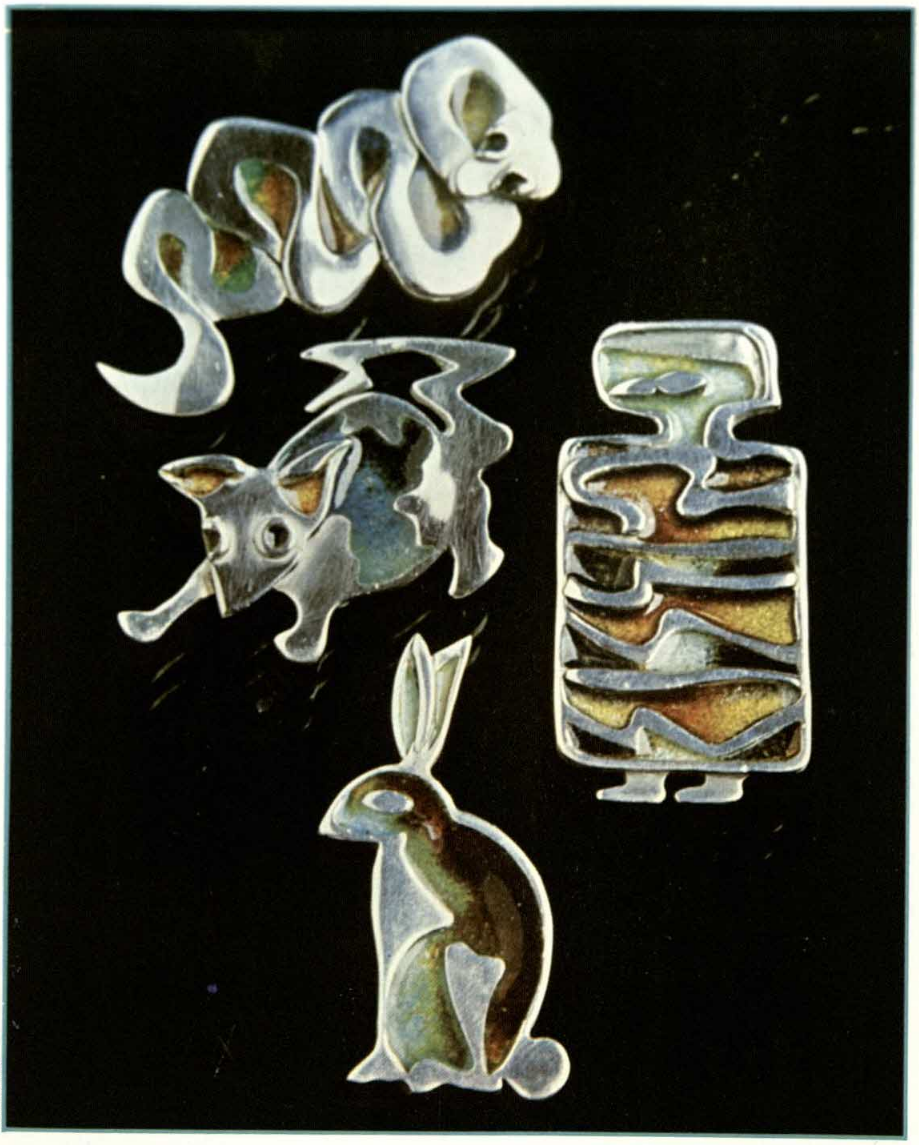


Kim Sayer

These delightful brooches were all made up and enamelled in the way described here. Designer Pat Johnson.

☐ Tilt the silver base back and forth to make sure that the solder fills in the nooks and crannies between the outside edge of the border and the base. Take care not to melt the silver by overheating.

Do not worry if the solder does not completely fill the crack between the base and the inside edge of the border. It is, in fact, better if it does not because solder, when it comes into contact with enamel, can discolour it if the piece is over-fired.

Make sure, however, that the two pieces of silver are completely fused on the outside edge. If gaps remain, allow piece to cool and then add more flux and extra pieces of solder and re-heat.

☐ When the solder has run, allow the brooch to cool down naturally until it is quite cold. Then holding it with the tweezers or forceps (not the tongs) put it into the pickle to dissolve any remaining flux. Leave for about 10 to 15 minutes. By cooling the brooch before putting it in the pickle you avoid splashing.

☐ Rinse the brooch thoroughly under running water. Dry with a soft cloth.

☐ Using the piercing saw in the usual way, cut away all the silver surrounding the border. Finish the edges with the needle files. You now have a silver shape with a relief border and detail.

☐ Solder a silver brooch fastening on to the back of the brooch, minus the pin. (Pin is fitted after enamelling).

☐ Switch on the kiln and bring it up to normal firing temperature, ie the firing chamber should be bright orange.

☐ It is a good idea at this stage to put the silver shape in the hot kiln and give it a 'dry run' firing, ie without any enamel. This is to make sure that no flux remains in the cracks. If there is a residue of flux undissolved by the pickle it will run out of the cracks and turn black during the firing. If such a residue is visible after the brooch is taken out of the kiln, cool the brooch, put it back into the pickle, rinse and dry it and do another dry run. Continue this process until no more flux appears. If you have a glass brush use this to brighten the silver to give an extra good finish on which to enamel. (Take care to get no finger grease on the area where enamel is to be applied.)

☐ You are now ready to enamel. The colours are applied in several thin layers starting with colourless, silver grade transparent flux.

☐ Wash the flux enamel powder carefully (Enamel chapter 11). Then, with a small paintbrush, place a thin layer of it inside the border on the front of the brooch. The water will help to spread the enamel in an even layer. The layer should be as thin as possible without letting the silver show through.

Note: if preferred, the enamel can be applied with a pen nib or the quill end of a feather which has had its point cut off diagonally.

☐ Draw off the excess water with a piece of absorbent paper.

☐ Place the brooch on a clean stilt, so that it rests on its fastening, and dry out on top of the kiln.

☐ When the powder has dried, check to see that there are no grains of enamel on exposed silver border. If there are any grains on the silver, brush them off.

☐ Fire the piece.

☐ Reverse the brooch and fire a coat of enamel on the back around the fastening, having first washed the powder.

☐ Turn the brooch right side up once more and lay in the lightest colour if several are being used.

☐ Continue adding successive layers of enamel (in successively darker colours if desired) until the enamel has reached the required depth.

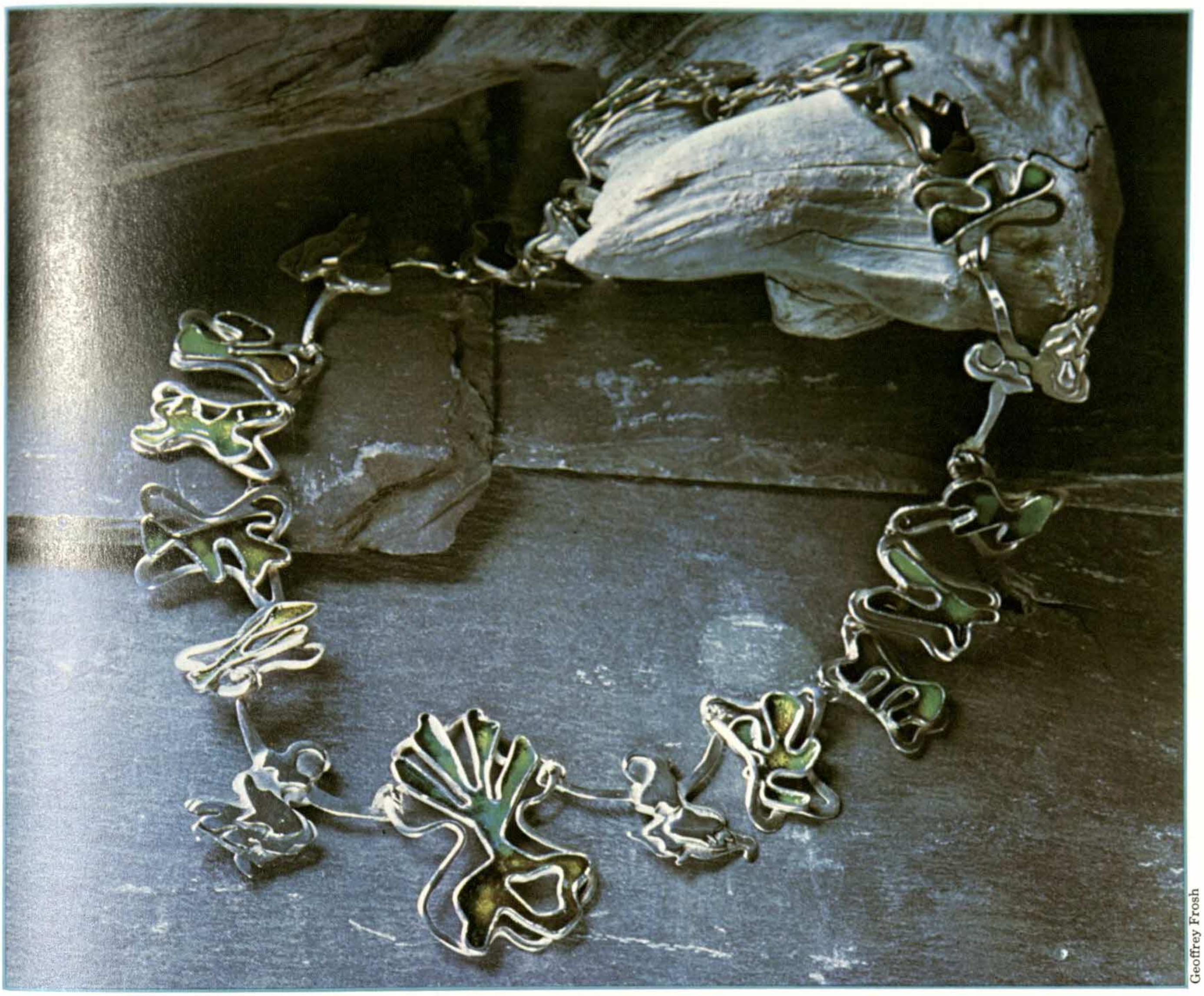
☐ By now the silver will be greyish with black solder showing around the edges. Clean it first under a running tap with soap-impregnated steel wool.

☐ If the enamel has got on the silver border, stone it off carefully under running water with a carborundum stone.

☐ Wash off all traces of carborundum under running water using a soft silver cleaning brush or soft nail brush.

☐ Continue the cleaning and polishing of the silver with successively fine grades of wet and dry paper, using the paper wet. Rinse the brooch between each grade of paper, using a soft brush as before.

☐ Dry the brooch on a soft cloth. Then polish the silver with successively fine polishing grades of emery paper, if available. Rinse away any traces of emery from the brooch, using a soft brush as before, and dry it between each grade used.



This necklace, called 'Wood Spirits' is made up of a series of enamelled silver trees interspersed with charming silver figures which are not enamelled.

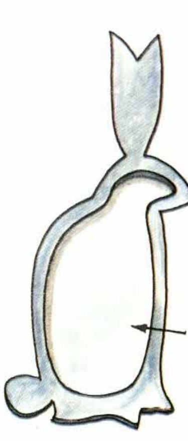
Geoffrey Frosh

☐ If there are any deep scratches on the silver use wet water of Ayr stone to smooth the metal. Rinse, using a soft brush as before, and dry.

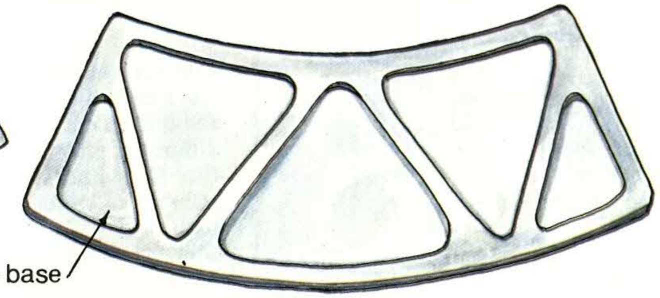
☐ You will probably find that the enamel has been scratched during the cleaning of the silver. If so, give the piece one more quick firing to bring back the gloss to the enamel. Do not over-fire.

☐ Then polish with tripoli and rouge by hand or with a polisher (Enamel chapter 11).

Alternatively, polish with silver polish.



4. *Back border on rabbit brooch.*



5. *Border and supports for necklet.*

Barbara Firth

Larger silver pieces

Large items are made up and enamelled in basically the same way as small pieces. When enamelling a larger silver piece, however, or doing a really professional job on a small one, it is necessary to have a border of silver around the back as well as on the front. This prevents warping. In the case of the rabbit brooch the back border could be shaped as in fig.4. A piece the size of the necklet (page 2298) would definitely need a supporting border at the back with included cross supports (fig.5). The cross supports would be tacked down with solder in the way described for the rabbit's eye and thigh.

How to read weaving drafts

Yarn — weaving 27

The weaving chapters so far are only concerned with plain weave—over and under one thread in both the warp and the weft. This chapter explores simple patterned weaves which rely on the threading and lifting of shafts. Even when no contrasting colour is used, textural designs can be created as the sampler shows. For these weaves you will need a table loom with at least four shafts.

Instead of the under one, over one structure, patterns are formed by the threads going over two or more threads in either the warp or the weft. The yarn which is taken over the threads is often described as a float.

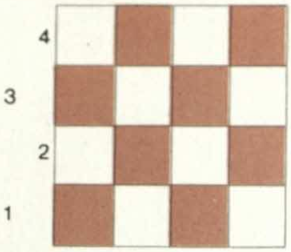
Weave patterns

Plain weave can be described in words, but this is not possible as one begins to use patterns. It is necessary to have a system of recording weaves visually so that you are able to understand patterns and cloth diagrams in relation to the corresponding piece of fabric. Whenever you design a fabric always record exactly how it was woven so that you can use it for reference when you want to weave it again.

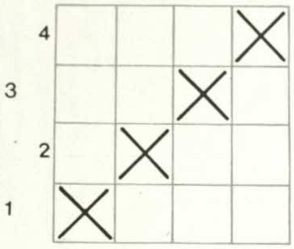
Weave diagrams are small graphs which show the relation of the warp to weft of a pattern. Fig.1 is the weave diagram for plain weave. Each dark square means that a warp end has been lifted and the weft thread runs under it. This rule always applies in weave diagrams.

Reading from left to right on the first line (1 in fig.1) the first and third squares are brown; on the second line the second and fourth are brown. If compared to a piece of plain weave, this will correspond directly to the over-and-under effect of the warp and weft threads with the warp and weft showing alternately.

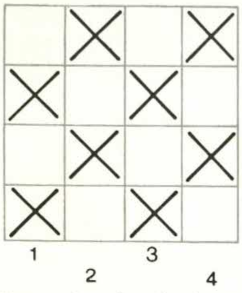
One horizontal line of squares represents the action of one weft pick going under and over the warp and, likewise, one vertical line of squares represents the action of one warp end. In this case, the brown squares show where the warp is on the surface and the white squares where the weft shows. A weave diagram shows you exactly how a pattern will look but it will not tell you how to weave it on a four-shaft loom. For this you need a weaver's pattern or draft.



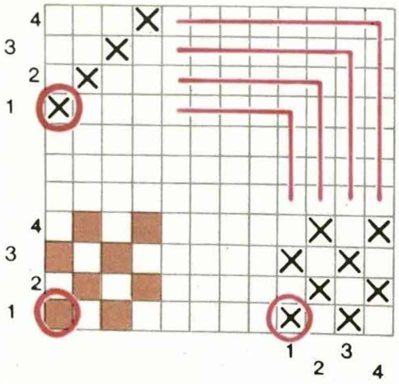
1. *Weave diagram of plain weave.*



2. *A draft for threading the loom.*



3. *Lifting plan for shaft sequence.*



4. *Full analysis of plain weave.*

A draft indicates the shaft on which each thread has to be threaded. As these are numbered 1, 2, 3, 4 from front to back the draft for plain weave (fig.2) shows that the loom was threaded up one thread on shaft 1, the second thread on shaft 2, the third thread on shaft 3 and the fourth thread on shaft 4. If no other directions are given this means that this sequence is repeated for each four threads right across for the rest of the cloth.

One other piece of information is needed once the loom has been threaded up—the lifting order for the shafts when actually weaving the fabric. You will obviously get a different pattern emerging by lifting the shafts in a different sequence or combination.

The lifting plan (fig.3) gives you the sequence in which the shafts are lifted in order to make the weave.

Once you have the weave diagram and the draft for a particular weave you can work out the lifting plan from the information contained in them. This is very important as many weaving drafts only give the weave diagram and threading draft.

Fig.4 shows the three weaving charts together. If you look at the first pick on the bottom row of the weave diagram you will see that the first brown square is ringed. Follow this square up to find to which shaft that warp thread is attached. Then follow across and down to the lifting diagram area—the cross is placed in the corresponding square of the lifting plan. This means that that particular warp end will be lifted at exactly the right time to create the pattern. When working out lifting plans always place the first row of the lifting on the same row as the weave diagram.

Looking at fig.4 you will see that to make a plain weave on a four-shaft loom threaded 1, 2, 3, 4 you will need to lift the shafts alternately 1 and 3 and 2 and 4. This is exactly how the poncho is woven in Weaving chapter 23, page 1842.

Block weaves

Obviously the permutations for design are enormous. In order to explore the different effects created by colour, threading and lifting it is best to try a number of different drafts and lifting plans.

Straight drafts which give small repeat patterns such as for weaving herringbone are dealt with in the next chapter. In this chapter block weaves which allow different patterns to be formed across the fabric are explored.

By threading different areas or blocks of your warp on to different shafts you can produce a fabric which has a series of varying patterns. The Huckaback weave is a simple example (fig.5). Here the threading is 2121234343 and the lifting plan for a classic Huckaback weave is divided into two separate sections.

The sampler shows a series of weaves which are all possible on this draft. It is also possible to do plain weave as well as patterning or to combine sections of plain weave with a pattern. Plain weave on this threading is shown in fig.6 and a combination of plain weave and Huckaback weave is shown in fig.7.

On the same draft a distorted weft pattern can also be woven. Here the combination of threading and lifts forces the weft into a circular shape. In this weave, sections of plain weave are interchanged with areas of floats or threads going over more than one thread. In fig.8, a thicker weft yarn has been inserted where the two sections change over and this pick has the effect of emphasizing the distorted weave. When you have a more complex weave where the colour order is important, as in this example, this has to be shown on the weave diagram.

The cushion

The cushion overleaf is made using a traditional weave design used extensively in Scandinavia and America for coverlets. Overshot weave has plain weave every other pick forming what is known as a plain weave ground. The picks in between are woven with a different type of weft which forms the pattern. This weft is usually a thicker, softer yarn than the ground weave and it floats over and under the plain weave. These designs are especially adaptable for cushions as they have good borders.

This cushion, 42.5cm (17″) sq, uses a particular Overshot weave called the Lover's Knot pattern.

You will need:

Four-shaft loom with weaving accessories.

Reed with 10 dents per 2.5cm (1″).

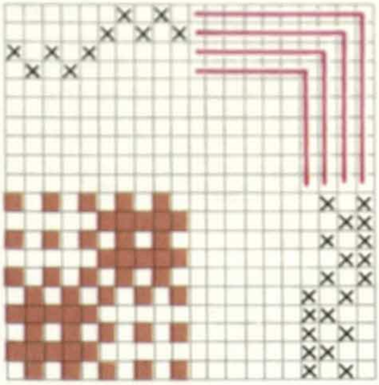
Warping equipment.

125gm (4oz) of white Cheviot woollen yarn with a count of 36 cut or a fine white Welsh woollen yarn.

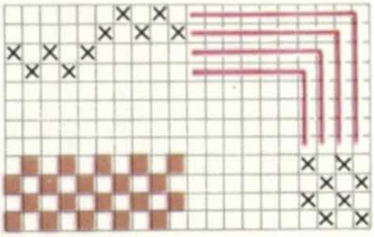
125gm (4oz) of medium Welsh woollen yarn in brown.

☐ Make a warp using the white Cheviot yarn. The warp should be 85cm (34″) for the two sides of the cushion woven in one length, plus 5cm (2″) for plain weave at each end, plus 10cm (4″) to make up the weaver's metre or yard plus 45cm (18″) for warp that cannot be woven. Make a warp that is 145cm (58″) long.

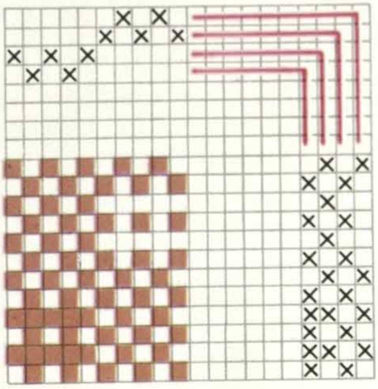
☐ Warp up 367 threads, 145cm (58″) long. Thread two ends per dent for a sett of 20 ends per 2.5cm (1″).



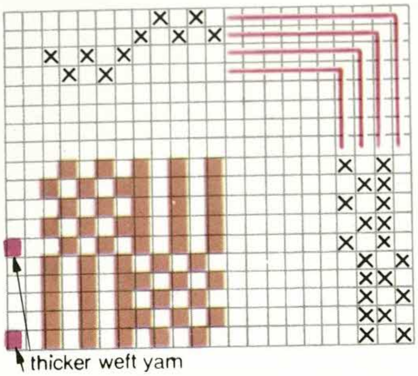
5. *Pattern for Huckaback weave.*



6. *Plain weave on same threading.*

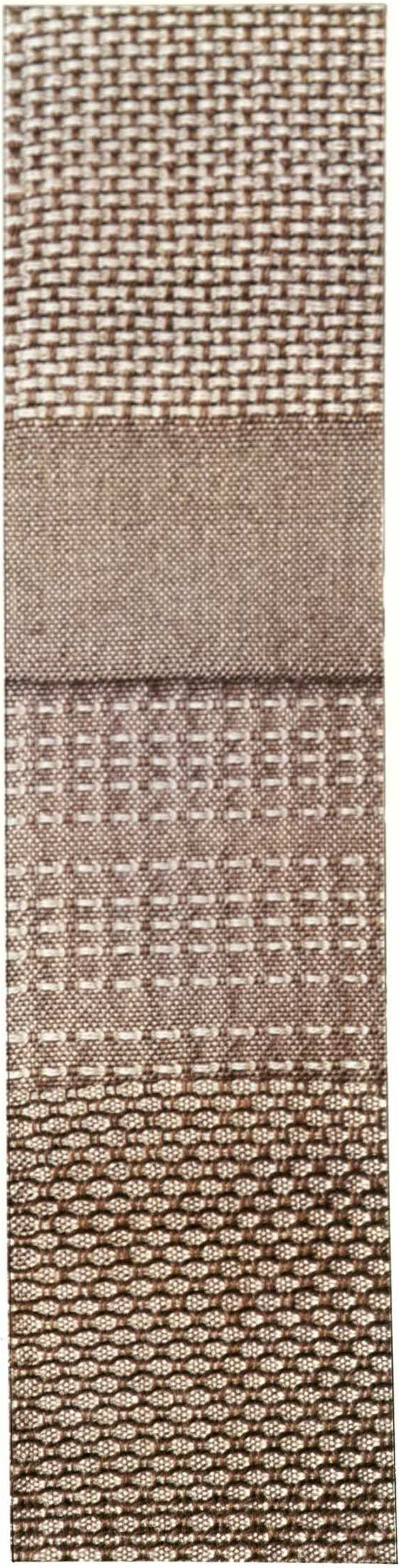


7. *Combination plain and Huckaback.*



8. *Distorted weft on same draft.*

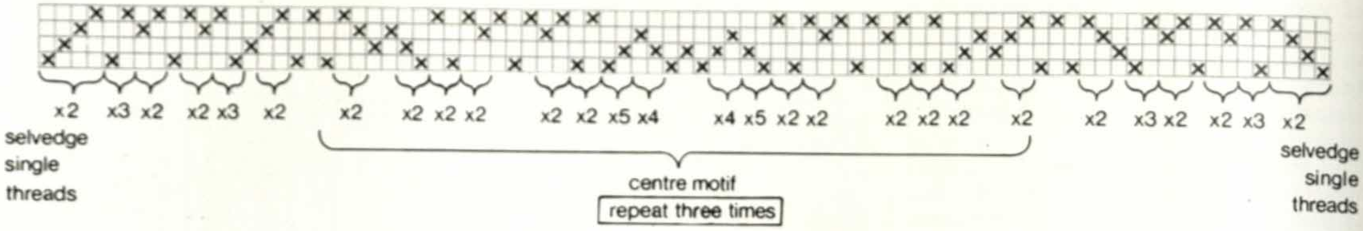
Coral Mula



Steve Bicknell

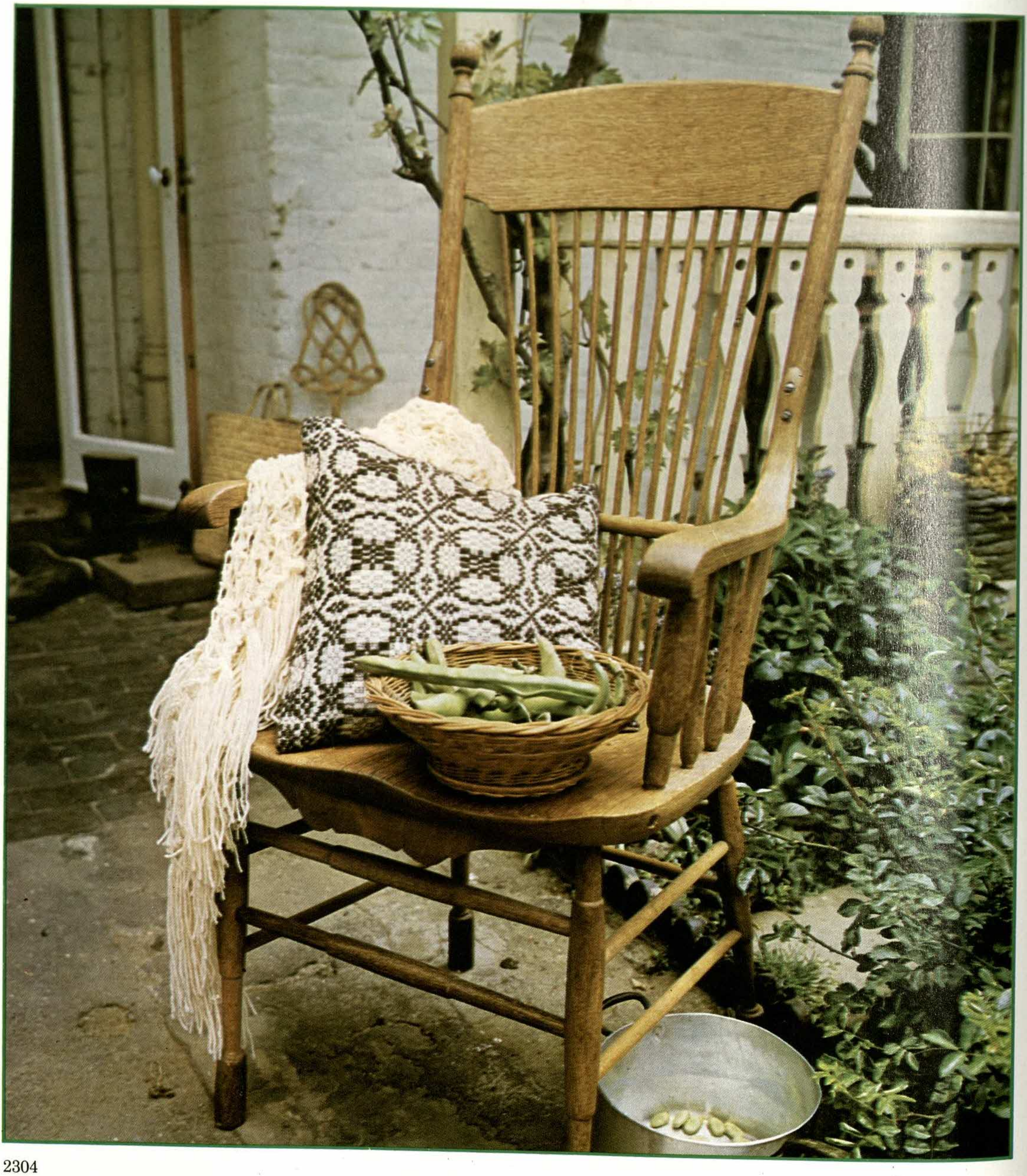
Sampler showing the different effects created by following figs.5-8.

Coral Mula



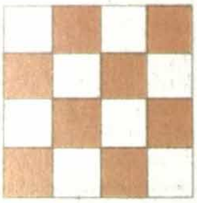
9. *Draft for cushion. Repeat bracketed areas as indicated.*

Below: cushion woven in traditional Lover's Knot pattern.

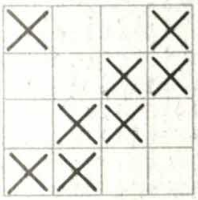


Steve Bicknell

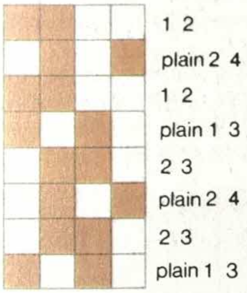
☐ Follow the draft (fig.9) when threading up the loom. As this is a block draft, it has been broken down into small repeat units. Every time x3 is found underneath a particular bracketed threading, you must repeat that threading three times. For instructions on threading the table loom see Weaving chapter 23, page 1842.



10. *Part of design is plain weave.*



11. *Lifts used to create pattern.*



12. *Plain and pattern weave alternate.*

Weaving. As this design is fairly complicated, a different system is used in recording the weave. It is not possible to give the whole weave diagram and lifting plan as these would be too large. It is necessary to find a different system to record the weave. The plain weave ground that is woven every other pick is shown in fig.10. Fig.11 shows the lifts needed to produce the pattern alone. In fig.12 the two weaves are placed together 1 and 3 and 2 and 4 of the plain weave alternating with the 2 and 3 and 1 and 2 lifts of the pattern. This is the basis for the design. Every other pick is in the thin white yarn and is in plain weave and the picks in between are in the brown yarn and follow the system of lifts shown in the lifting chart.

☐ Begin by weaving about 2.5cm (1″) of plain weave. This will provide the selvedge for making up the cushion. Finish by weaving a pick with shafts 2 and 4 lifted.

☐ Start weaving the border (see chart). Weave one pick with shafts 2 and 3 lifted using the thick brown yarn.

☐ Weave the return pick with the white yarn with shafts 1 and 3 lifted. This gives you a row of plain weave.

☐ Weave one pick in the brown yarn with shafts 2 and 3 lifted. This is the second row of the pattern.

☐ Weave the return row in plain weave with shafts 2 and 4 lifted.

☐ Continue in this way until you have completed the five picks of pattern with shafts 2 and 3 lifted.

The main motif is repeated three times.

Lift chart

2.5cm (1″) of Plain Weave.

Border

2 & 3—5 times
1 & 2—4 times
2 & 3—twice
1 & 2—4 times
2 & 3—5 times

Centre motif

1 & 4—3 times
3 & 4—3 times
2 & 3—4 times
1 & 2—4 times
2 & 3—3 times
1 & 2—4 times
2 & 3—4 times
3 & 4—6 times
4 & 1—4 times
3 & 4—3 times
4 & 1—twice
3 & 4—3 times
4 & 1—4 times
3 & 4—6 times
2 & 3—4 times
1 & 2—4 times
2 & 3—3 times
1 & 2—4 times
2 & 3—4 times
3 & 4—3 times
1 & 4—3 times

Small motif

1 & 2—3 times
2 & 3—3 times
1 & 2—3 times

Centre motif } repeated twice
Small motif }
Border once
1.25cm (½″) Plain Weave
Border—once
Centre motif } repeated three times
Small motif }
Border—once
2.5cm (1″) of Plain Weave

☐ Weave one row in plain weave and go on to the first of the four picks with shafts 1 and 2 lifted.

☐ Complete the border design.

☐ Weave one pick of plain weave and go straight on to the lifts for the large centre motif.

☐ Follow chart repeating the three different pattern areas as indicated.

☐ Finish off with 2.5cm (1″) of plain weave.

☐ Remove the cloth from the loom and fold the cloth in half. When making up the cushion cover, use the selvedge areas for the seams.

Finishing

It is always necessary to finish handwoven fabrics in some way in order to 'set' the fabric. This helps the fabric to hang more successfully and will remove the excess oil from some woollen fabrics. Finishing is most important for tweeds, woollen and worsted fabrics which need to be either scoured or milled.

Scouring consists of washing the fabric in soap flakes and soft warm water in order to remove the excess grease. This is all that may be necessary for some worsted or woollen fabrics.

Milling. Tweed fabrics will probably require milling which is best done in the bath with soap flakes and a small amount of soft water. The fabric is folded over in the solution and then worked with the hands. The process is repeated when the soap is used up. Great care must be taken not to leave the fabric wet for too long as it is impossible to reverse the milling process and once felted (or matted) the fabric is spoiled.

When scouring or milling is finished, it is then important to pin out the fabric or sample on a board or wrap it carefully around a drying roller. The drying process must be handled with great care because when the fabric is dry it will be permanently finished. The fabric should be pulled out carefully so that the warp is at right angles to the weft.

Steam finishing. Worsted or woollen fabrics may also be finished or 'set' by steam. This can be done by pressing the fabric on a padded surface such as a blanket with a very damp cloth and a hot iron. The iron must be lifted and moved to all parts of the fabric—not ironed, as this could stretch or distort the fabric.

Cottons and silks are easier to finish than wool as milling and scouring are not necessary. Washing in warm soft water with soap flakes followed by rolling out or pinning are all that is required.

Intaglio printing and engraving

'Intaglio' is an Italian word meaning to incise or cut. Intaglio printing involves taking a print from a cut in a metal plate. The metal plates are generally made of copper or zinc and engraving, etching and dry-point are the methods used to incise into it.

At one time the etcher or engraver used the skills of professional printers to print his editions, but today the professional printer is a dying breed and, Paris apart, is almost extinct in Europe. Thus most artists are forced to print their own work. The greatest advantage of printing one's own work is that the printmaker can have the thrill of seeing the first print produced and can also periodically check how the work is progressing by making intermediate prints.

An intaglio press is a very expensive piece of equipment but it is possible to make a fairly cheap improvised press for home use.

A print from an intaglio plate is made by filling the cavities in the metal with ink and then thoroughly cleansing the surface of the plate. Damp paper which has been placed on top of the plate is forced into the ink-filled design by a press.

When the paper is peeled off the plate it takes the ink from the engraved lines as well as a slight film of ink from the surface of the plate.

The final print is like a mould taken from an inked plate; the edges of the plate make a permanent indentation in the paper—an added attraction of intaglio printing.

It is not difficult to obtain a good print, but an edition of first-class prints requires practice.

An intaglio press

Presses can be bought from a press manufacturer or, alternatively, most art colleges possess one which you may be able to use.

However, you may prefer to make your own.

You will need:

An old-fashioned washing mangle, such as a large or medium sized Acme wringer. These can be found in junk and second-hand shops. The best mangles are those on cast-iron stands which give them extra weight. Smaller ones which screw on to a table or sink also give good results.

A steel plate the width of the rollers and 3mm ($\frac{1}{8}$") thick, known as the 'bed'.

3 or 4 pieces of felt known as 'blankets' the size of the bed and 3mm ($\frac{1}{8}$") thick.

2 blocks of wood the same height off the ground as the rollers of the mangle (optional).

The main problem is to keep the bed horizontal during printing. The means of doing this will obviously depend largely on the type of mangle or wringer you use. By placing a solid block of wood the same height as the mangle rollers, on either side of it the bed should remain stable and horizontal. The mangle or wringer will normally have a screw to adjust the pressure between the two rollers. There should be an even pressure between the rollers—this can be tested by running your metal plate through the press and taking an experimental print.

Printing

For all the different types of intaglio plates there is only one method of printing. The art of engraving into metal will be explained later in this chapter. Etching, dry-point, mezzotint and aquatint are in later chapters.

Paper

Paper is one of the most important constituents of a good print.

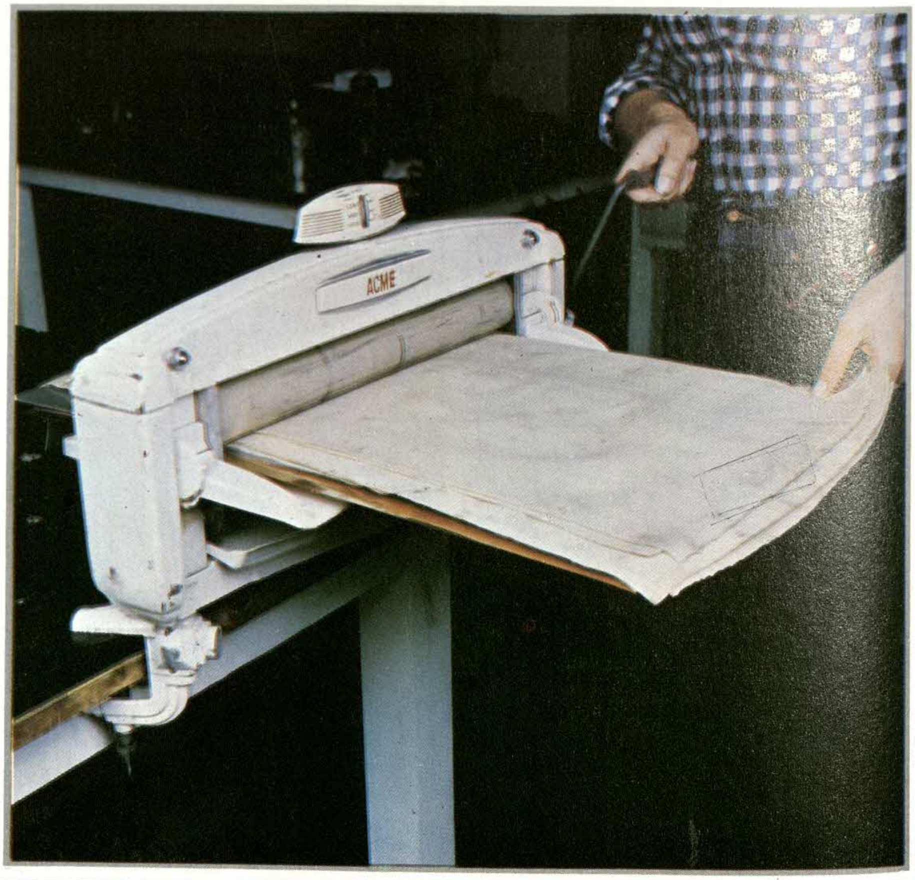
Special paper can be bought for intaglio printing. Hand-made papers are the best, but the essential is that the paper should be absorbent. By far the best is hand-made cotton rag paper. This can be purchased at most good art supply shops, but is expensive.

For economy, a mould-made rag paper produces adequate prints.

Most paper is coated with gelatine, to prevent it from being too absorbent. Too much gelatine will spoil paper for printing. Consequently, before printing, the paper should be soaked in a dish of clean water to dissolve some of the gelatine. For the average mould-made rag paper ten minutes should be sufficient. Less time is needed for hand-made rag paper.

Before soaking, the paper should be

An old-fashioned washing mangle can be converted into an intaglio printing press making it easy for the amateur to pull his own prints.



cut to the required size. It should be 5cm (2") larger than the printing plate all round but smaller than the bed.

After soaking, the paper should be sandwiched between two sheets of blotting paper under slight pressure for three hours.

It is now ready for printing.

Sufficient paper should be prepared for an entire edition of prints.

Ink

Ink is also a vital part of the print. Many printmakers prefer to grind their own ink for the best results, but it is possible to buy ready-mixed printing ink from art supply shops.

There is no specific recipe for grinding ink. A printer will discover the correct consistency by trial and error.

To mix ink you will need:

Frankfort black powdered ink (available at art supply shops).

Linseed oil (sometimes known as copperplate oil) available at art supply shops.

A palette knife.

A muller (a tool used for grinding powder on a slab) available from art supply shops.

A marble slab.

☐ Using a palette knife, mix the copperplate oil a little at a time into the Frankfort powder on the slab.

☐ Carefully rub out blobs of oil in the powder with the palette knife.

☐ When the ink becomes a soft paste, grind it with the muller, slowly adding more oil until the ink reaches such a consistency that a blob will hang from the end of a palette knife. It is impossible to grind ink too much by hand. When ground by machinery, however, ink is easily spoiled by heating and over grinding.

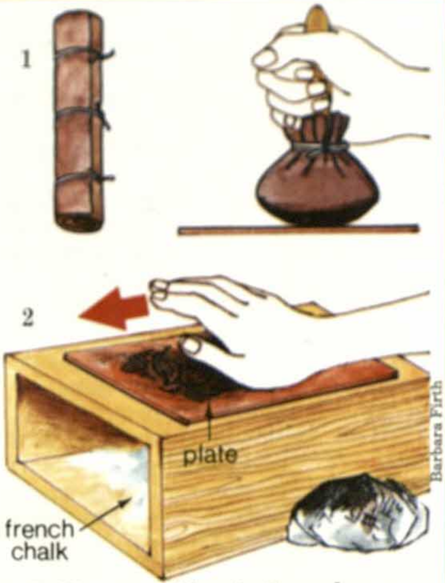
If the ink remains hard or dead on the palette knife there is too little oil in it. Ready-mixed ink might still need extra oil if it seems too solid. This can be mixed in with a palette knife.

Inking the plate

Before inking up a plate, sharp corners and edges must be filed on the back and front to avoid a cutting edge. If this is not done there is a danger of cutting not only the felt blankets and paper but also your hands.

When inking a plate it should be gently warmed on a hot-plate. Spread the ink on to the plate using a dabber or dolly (available at art supply shops) shown in fig.1. Make sure the dabber is soft and there are no particles of dried ink adhering to it as the plate could easily be scratched—one of the main dangers of printing.

Once the plate is well covered with ink the surplus should be wiped off with pads of muslin or any other soft hairless material. Two pads of muslin are generally used. With the first (making quite sure it is free of any particles which could scratch the plate) slowly wipe the plate, forcing ink into the lines. Wipe towards you and, at the same time, remove as much of the excess ink as possible.



1. *Dabbers or dollies.* 2. *Jigger box.*

Take the second muslin pad and with an even, flat, circular motion remove more ink from the plate.

Remove the plate from the hot-plate and place it on a jigger box (any solid box laid on its side with an opening at one end which is larger than the metal plate) as shown in fig.2.

Finish by hand wiping the plate while

A dabber or dolly is used to ink up the printing plate.

Quality prints can be made using a home-made press.

it is on the jigger box.

Smooth a little french chalk (stored in the jigger box) on to your hand.

Dab a little ink on to the fat part of the palm of your hand.

Start to wipe the engraved plate with this part of your hand.

Use a motion as if you were brushing crumbs off a table. The movement should be light and fast in more than one direction.

The plate should remain warm throughout the hand wiping, it may be necessary to return it to the hot-plate.

Printing the plate

When an intaglio plate has been inked up it is ready for printing.

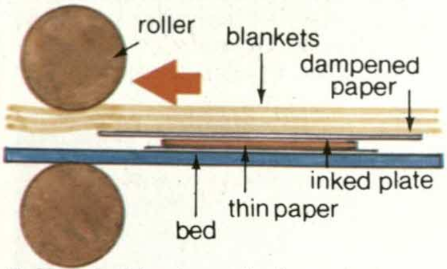
You will need:

An intaglio press.
A sheet of thin paper.
A dampened sheet of printing paper.
3 felt blankets (pieces of good quality felt the size of the steel bed).
An intaglio plate.

☐ Place the inked metal plate on a sheet of thin paper, inked side up.

☐ Place a sheet of dampened printing paper on the inked plate, then cover it with three felt blankets (fig.3).

☐ The bed, plate, paper and felts should all be pulled horizontally through the press.



3. *Keep bed horizontal when printing.*

You may need to repeat this process more than once before producing a satisfactory result.

It may be necessary to adjust the pressure of the rollers. At all times keep the bed horizontal. The pressure should be even and there should be no skidding of the plates and blankets.

The rollers should be turned evenly and without stopping until the whole print has passed through. If you stop half way, a mark will be left.

Engraving

Engraving is a technique used to make intaglio plates. Engraving into stone was an art perfected by the ancient Greeks and, before them, the early Egyptians. Some of the Pharaohs' tombs contained very intricate engravings and much history has been discovered through the interpretation of these.

For a long time engraving has been one of the skills of goldsmiths and metal-chasers and is one of the most important methods of decorating metals. Engraved plates were first used for printing by the Italians during the early part of the Renaissance, hence the name 'intaglio'.

Impressions and prints were originally taken to record the designs engraved into precious metals.

Ink was rubbed into the recessed or engraved lines, paper pressed hard against it and so an intaglio print was produced.

Soon artists adopted the technique as a medium in its own right. Being able to print a series of prints from one design or picture meant that the artist was able to reach a far larger audience than if a single painting were produced. Albrecht Dürer, the well-known German artist, was one of the first to introduce intaglio to Northern Europe. It soon became a generally accepted art form and many well-known artists including Rembrandt in Holland and Hogarth in England used engraving for a large amount of their work.

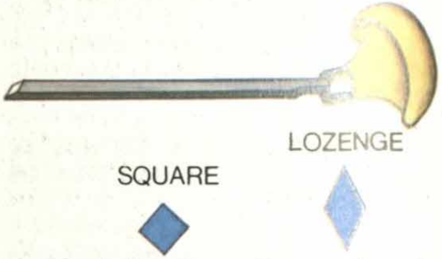
Printmaking suffered in popularity as an art form from the middle of the 19th century and was mainly regarded as a means of reproducing paintings in black and white and for the illustration of books and magazines (often tinted by hand).

A revival of printmaking began in the early 1920s and its popularity has continued.

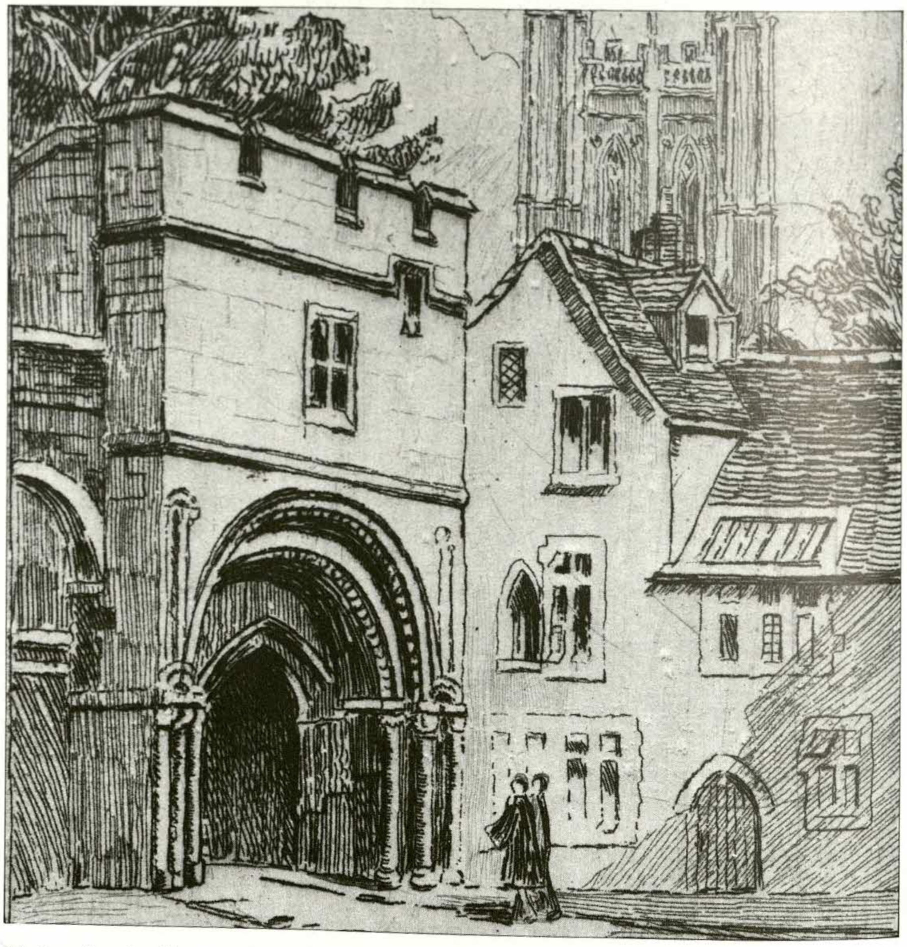
Materials

When engraving, you are simply digging a small hole into the metal plate. The depth of the hole will regulate the boldness of the line when it is printed. A deep hole containing more ink will print darker than a shallow one.

The burin. The tool used for engraving is known as a graver or, more commonly, by its French name, a 'burin' (fig.4). It is a short, highly tempered steel rod, one end of which is sharpened and the other fitted into a handle. The steel rod is either square



4. *A burin is square or lozenge shaped.*

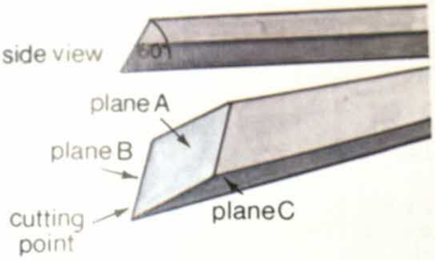


A J Weelen

Notice the shading and the deep lines used in this engraving by A. J. Weelen.

or lozenge shaped, cut off at an angle of 60° (fig.5). The three planes A, B and C should be adjacent and meet at the cutting point. There must be no plane, however minute, between them.

The cutting edge should be absolutely sharp and it should cut like a knife. This will necessitate frequent sharpening or honing.



5. *The cutting point must be sharp.*

To sharpen the burin you will need to use an Arkansas stone, a fine carborundum or a razor hone. Begin by grinding the side planes. Use machine oil and grind until the side planes are absolutely smooth and flat.

For the 60° angle and no extra planes, grind the cutting plane against the stone with a fast circular movement.

The metal plate used for engraving should either be made of copper or zinc. The latter is the least expensive. Both can be bought from art supply shops and unless you have your own metal cutting equipment they should be bought cut to the necessary size.

You will also need:

A metal scraper (available at art supply shops).

Charcoal or 4/0 emery paper.

A soft lead pencil.

Tracing paper.

Metal polish such as Brasso.

Engraving a plate

Every artist will use engraving to produce a different effect. A simple line drawing can be produced, or alternatively an illustration shaded and toned to varying degrees.

Generally, the design or picture is drawn directly on to the metal plate with a soft lead pencil.

Alternatively, a tracing can be made of a particular picture using a soft lead pencil. Damp the back of the tracing paper and then transfer it to the metal plate.

Cutting. The burin handle should fit snugly in the palm of the hand. The rod is steered forward by the thumb and forefinger (fig.6) in the direction of the line being cut.

The burin is pushed forward by the palm of the hand to cut a line. The burin is not an easy tool to operate and considerable pressure and practice is required to manipulate it.

A thin spiral of metal comes off the plate (fig.7). If not, it means the surface of the plate is only being scratched, thus any prints taken will not give the clear, sharp line that is essential to engraving. If a spiral appears but is very tight or if the burin jumps while cutting, the tip of the burin may be broken or blunt.

The cutting point takes some while to wear down. A careless movement can snap it off—this often occurs when crossing other engraved lines. If this does happen, only the cutting plane needs to be re-sharpened until the extra plane has been eradicated.

When holding the metal plate during engraving, make sure that your hand is well away from the burin. The burin often slips and this can cause a nasty gash in the hand.

Another warning: do not try to brush off the metal spirals with your fingers as they are as sharp as needles and will get into the flesh where they can cause poisoning.

There are three different types of straight line:

An imcomplete line. Push the burin gently forward into the metal and a spiral will appear. Lift the point slowly, allowing the burin to come out of the metal. The line will be sufficiently deep to hold ink except at the points of entry and exit, so when printed it will fade out at each end.

A half line. The burin enters the metal making a cut and a spiral of metal appears, attached to the plate; now stop, withdraw the burin and cut off the metal spiral with a scraper. The line you have made will be fainter at the beginning but clearly defined at the end.

A precise line. After making a half line, turn the metal plate 180°. Place the burin into the cut line and push it up to where the line started, then stop. Cut off the metal spiral with the scraper. The line should print evenly throughout its entire length.

Different tones and effects can be produced by cutting lines into the plate close together or wide apart or by crossing lines (fig.8).

A bent or curved line for shaping of rounded forms (fig.9) is made by holding the burin in the same position as for a straight line and moving the metal plate.

A vignetted effect (fig.10) is produced by drawing precise lines, starting off apart and becoming closer together. This will give a shaded effect—darker where the lines are close together progressing to a lighter shade where they are further apart.

Deeper, darker lines are made simply by re-cutting the original lines. When a still darker line is required cut a second line parallel to the first and cut away any surface copper that lies between them.

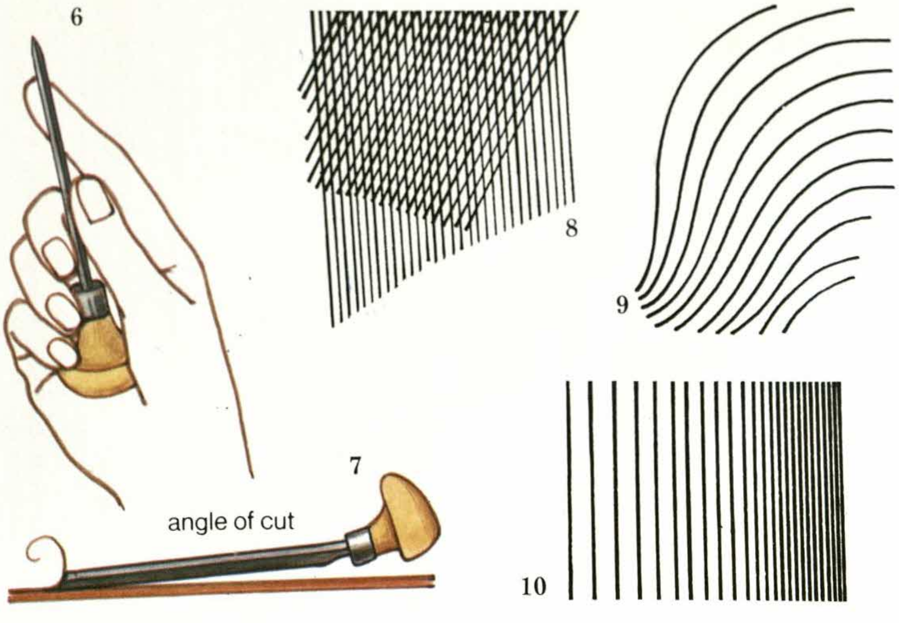
A dot is made by jabbing the burin into the metal, spinning the plate around and, with the burin still in the same position, making a jab into the first half dot.

Once the plate has been engraved, using charcoal or 4/0 emery paper, remove the burr (the rough metal along the edges of the engraved lines).

Polish the plate with metal polish and take a print.

Continue using the metal plate for printing until the finished print becomes less than perfect ie the lines become blurred and the detail hard to distinguish.

You will need to re-ink your plate each time a print is pulled from it.



6-10. *Holding burin, cutting angle and various linear effects.*

Barbara Firth

Papier mâché glove puppets

Because papier mâché is cheap, durable and adaptable, it is highly suitable for modelling the heads of puppets and dolls. Even a beginner will find it easy to make the basic head shape and, with practice, sophisticated caricatures can be made by using papier mâché pulp as a sculpture medium.

Glove puppets

The instructions given here are for papier mâché heads which are fairly simple in design but which can be used for a wide range of characters simply by painting on different facial features. By changing the costume (the glove) which is attached to a head, only a few puppet heads need be made in order to represent many different characters. You can also make the hands for glove puppets from papier mâché.

Making both heads and hands of these glove puppets involves two methods of using papier mâché: the strip method and the mash or pulp method (see Paper chapter 58, page 2186). The basic head shapes are made using the strip method, where layer upon layer of paper strips are shaped round the mould. Their features (nose, ears, cheek-bones) are modelled on this basic head shape with paper pulp and secured with more strips of paper to make a smooth surface.

The mould and stand

The mould consists of a cloth bag which is filled with cat box granules (commonly known as 'cat litter') and secured to a modelling stand which is a wooden post fixed on to a wooden block. The granules absorb the moisture from the papier mâché, helping it to dry easily. The stand makes modelling easier since it provides a steady base on which to shape the papier mâché.

You will need:

Wooden block about 15cm (6″) sq and about 25mm (1″) thick.

Dowel or part of a broomstick 20cm (8") long and 20mm (¾") in diameter.

PVA glue such as Evo-stik Wood Adhesive or Bostik Carpentry.

Brace with 20mm (¾") flat bit and hammer, or a screwdriver and one 50mm (2") No.8 screw.

A piece of old sheeting or similar closely woven fabric, at least 12.5cm x 30cm (5"x 12").

About 230gm (½lb) cat box granules.

A few pins, a needle and strong thread such as button thread, scissors.

Tracing paper and pencil.

A sheet of newspaper, sticky tape.

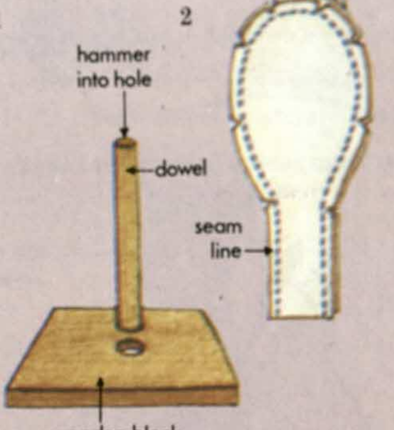
To make the modelling stand:

☐ Drill a hole through the centre of the wooden block with the 20mm (¾") flat bit. Spread glue on one end of the dowel and inside the hole, and hammer the dowel into the hole, to the depth of the wooden block (fig.1). Alternatively, glue the dowel directly on to the block and screw it in place from underneath.

To make the mould:

☐ Trace the pattern overleaf. Use it to cut three pieces of old sheeting or similar fabric. Leaving 6mm (¼") seams and following the dotted lines on the pattern, sew the pieces together firmly with strong thread (fig.2). (It is preferable to machine stitch the pieces.) Leave the neck edge open. Clip curves and turn inside out.

1. *Modelling stand.* 2. *Sewing mould.*



Victoria Drew

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Melvin Grey

☐ Pack the bag firmly with cat box granules, to about 2cm (¾") from the neck edge of the bag. Hold the stand upside down and push the dowel into the bag, to a depth of about 7.5cm (3"), or so that the mould does not wobble on its stand.

☐ Wind strong thread round the neck of the bag and the dowel post, just above the filling, and knot securely. Turn the stand and mould upright (fig.3).

☐ Cover the mould with a single sheet of newspaper, crush it close to the mould and secure with sticky tape at the base of the neck. Tear off any excess paper below the sticky tape. This sheet of newspaper is the base to which the paper strips are stuck, and stops the strips sticking to the mould.

Modelling the head

You will need:

Newspapers.

Wallpaper paste containing size, such as Polycell, mixed with water according to the manufacturer's instructions.

Plastic bucket and bowl.

Wooden spoon.

Plastic or wooden cocktail stick or fork.

☐ Tear enough newspaper into small strips to cover the mould with at least eight layers.

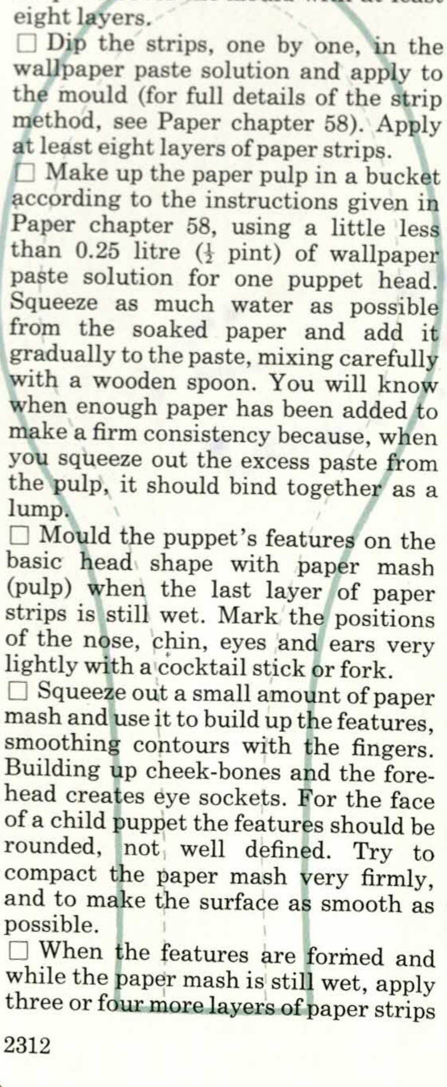
☐ Dip the strips, one by one, in the wallpaper paste solution and apply to the mould (for full details of the strip method, see Paper chapter 58). Apply at least eight layers of paper strips.

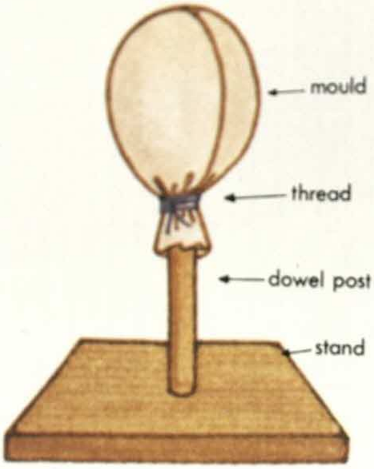
☐ Make up the paper pulp in a bucket according to the instructions given in Paper chapter 58, using a little less than 0.25 litre (½ pint) of wallpaper paste solution for one puppet head. Squeeze as much water as possible from the soaked paper and add it gradually to the paste, mixing carefully with a wooden spoon. You will know when enough paper has been added to make a firm consistency because, when you squeeze out the excess paste from the pulp, it should bind together as a lump.

☐ Mould the puppet's features on the basic head shape with paper mash (pulp) when the last layer of paper strips is still wet. Mark the positions of the nose, chin, eyes and ears very lightly with a cocktail stick or fork.

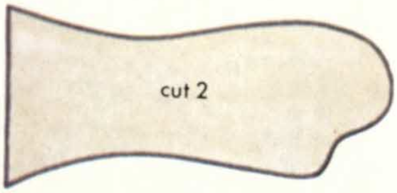
☐ Squeeze out a small amount of paper mash and use it to build up the features, smoothing contours with the fingers. Building up cheek-bones and the forehead creates eye sockets. For the face of a child puppet the features should be rounded, not well defined. Try to compact the paper mash very firmly, and to make the surface as smooth as possible.

☐ When the features are formed and while the paper mash is still wet, apply three or four more layers of paper strips to secure the mash to the layers of paper strips beneath it.

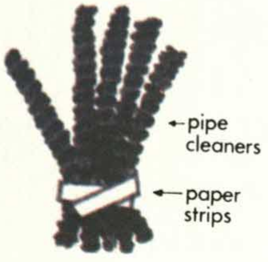




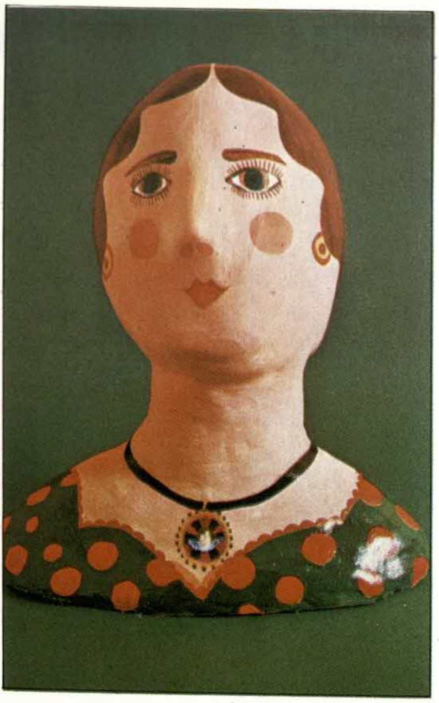
3. *Fix the filled mould to the stand.*



4. *Trace pattern for cardboard hands.*



5. *Pipe cleaners used to make a hand.*



100 Idées de Marie Claire/Capurro

Above: doll's head of papier mâché. Left: trace pattern for mould.

☐ Leave the head on the modelling stand to dry for a day or two, until the surface is a uniformly pale grey colour and feels dry to the touch.

☐ Carefully turn the head and stand upside down, untie the thread at the neck and remove the stand. Let the granules fall out of the mould into a basin or bag, so that they can be used again. Pull out the fabric mould and keep it for re-use; it should come away easily.

☐ If the inside of the head is not thoroughly dry, you can put it in an oven at the lowest possible heat and with the door open. Check the head frequently and remove it from the oven as soon as it is completely dry. This may take a few hours.

The hands

To make hands, cardboard hand shapes may be covered with paper strips. Pipe cleaners covered with paper pulp make hands which are capable of holding various props such as a walking stick or baton.

You will need:

Piece of cardboard about 5cm x 5cm (2"x 2"), or four pipe cleaners.

Newspaper, wallpaper paste solution.

Pins, pencil, scissors.

Tracing paper if you are using cardboard.

☐ To make a pair of hands using cardboard as a base, trace the pattern for the hands (fig.4) and draw it twice on to the cardboard. Cut out the shapes.

☐ Stick a pin through each cardboard wrist, so that you can hold the cardboard steady while applying the papier mâché. Tear newspaper into very small strips and, using the strip method already described, apply six layers of strips to both hands and wrists. Leave them to dry away from direct heat; they may curl at the edges if dried in an oven.

☐ To cover pipe cleaners with paper pulp, making more capable and expressive hands, cut the pipe cleaners into eight lengths of 5cm (2") for the fingers and two slightly smaller lengths for the thumbs. Bind four finger lengths and one thumb together with strips of paper and paste round one end, to hold the pipe cleaners together (fig.5) before building up the hand shape.

☐ Spread and bend the pipe cleaners to the desired shape. Cover the main part of the hand with pulp, and the fingers with several layers of paper strips. Finally cover the whole hand with an even, smooth paper strip layer.

☐ Bind the remaining lengths of pipe cleaner together for the other hand, in the same way as the others, and cover with papier mâché pulp and strips as already described.

Painting and varnishing

You will need:

Coarse and fine grade glasspaper.

Paints and brushes. Acrylic paints are excellent but expensive. Poster paints are also suitable. You will need black and white as well as primary colours.

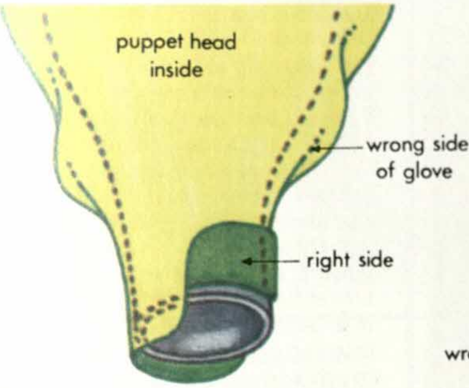
Clear polyurethane varnish, either gloss or matt, and a 2.5cm (1") brush.

☐ Before painting, rub down all surfaces of the head and hands with coarse and then fine glasspaper.

☐ Draw the eye shapes on the head and paint them white. Paint the rest of the head and neck flesh colour. While it is still wet, blend in shading and cheek colouring on the face with a dry brush loaded with various shades of pink.

☐ Paint hair with several shades of the same colour for a realistic effect. (If you wish to stick on fur fabric to represent hair there is no need to paint on the hair.)

☐ Paint the hands flesh colour and, if they are made on a cardboard base, paint lines in red on the back and front of each to indicate fingers. Paint fingernails white; these show up well.



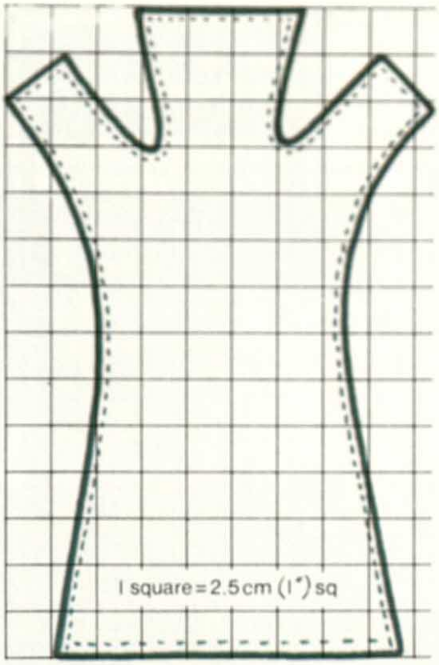
6. *Turn up neck of glove over head.*

☐ Finally, varnish all the painted surfaces with two coats of clear polyurethane varnish.

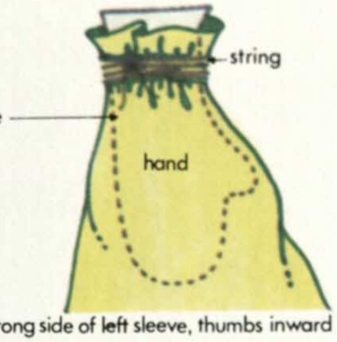
The glove

If you have to adapt the graph pattern given, bear in mind that the usual configuration of the fingers is: index finger in the head, thumb in one arm, second finger in the other arm, and third and fourth fingers folded into the body. Make sure that the thumb and index finger just reach the ends of the arms and that there is plenty of room in the body for the other fingers. Adults can use the pattern if they make it 6mm (¼") longer all round; for very young children it should be made about 6mm (¼") smaller all round.

The length of the glove is a matter of choice; this pattern allows for a long glove such as professional puppeteers use, so that the puppet can be moved freely without the puppeteer's arm showing above the stage.



Graph pattern for glove.



Victoria Drew

7. *Attach hand to glove with string.*

Use strong fabrics such as felt, heavy wool or denim, since these do not have to be lined in order to give a substantial body to the puppet. The fabrics used for the back and front of the glove need not be identical.

You will need:

Tracing paper and pencil.

Fabric as already described, at least 60cm x 30cm (24"x 12").

Tape, braid, or a strip of hemmed material 7.5cm (3") long and 6mm-12mm (¼"-½") wide.

Scissors, pins, needle and thread.

String about 70cm (28") long, to attach the head and hands to the glove.

☐ Trace, enlarge and cut out the graph pattern and pin it to the fabric.

☐ Cut out two pieces of fabric round the pattern. With right sides together, sew them along the stitching lines shown on the pattern, leaving 6mm (¼") seams all round. Leave the neck, wrists and bottom of the glove unsewn.

☐ Turn the glove right side out and tack the fabric back 6mm (¼") inside the neck and wrists of the glove. Turn up and hem the bottom if necessary.

☐ To attach the head to the glove, insert the neck of the head into the neck of the glove. Turn the glove inside out by pushing it up over the head, so that the right side of the neck of the glove faces the neck of the head (fig.6). Turn up the top 2.5cm (1") of the neck of the glove so that the cloth is of double thickness and fits tightly round the neck of the head (see fig.6). Cut a length of string about 50cm (20") long and wind it round the neck of the head and the neck of the glove several times and tie securely.

☐ To attach the hands to the sleeves, turn the sleeves inside out and insert each hand into them from the right side of the fabric, up to the wrists, with the thumbs towards the head and palms facing the same way as the face. Fold back about 2cm (¾") of the fabric from the tacked edge and wind one 10cm (4") length of string round each sleeve and wrist (fig.7). Turn glove right side out.

Attaching the glove to the head and hands with string means that it is easy to remove the glove and fit on another for a change of costume.

☐ Wind a strip of tape, braid or hemmed material round the puppet's neck and stitch the ends together.

Additional dress. Additional items of costume such as hats, shawls and aprons can be made from scraps of fabric; pieces of fur can be stuck on to the head to make the hair; and props such as baskets, frying pans and sticks are easy to make from papier mâché. Do not make the props too small for the puppets to grasp and the audience to see.

Dolls' heads

The doll's head is also made of papier mâché and could be fitted over a stuffed fabric body. The mould used is different from that for the puppet heads, since it must incorporate a neck piece which fits over the front and back of the doll's cloth body.

The head (including neck piece) is first modelled in clay, slightly larger than the desired finished size, to allow for papier mâché shrinkage when dry.

The clay model is then cast in plaster, which is cut in two pieces (from ear to ear). When dry, the two halves of the cast are pulled apart, washed out with clay water and allowed to dry thoroughly.

The inner surfaces of the cast are then greased with margarine or oil, the paper pulp is firmly pressed against them, and the two halves are then pressed together and the pulp allowed to dry. The cast is then removed.

Finally the head is sanded down, painted and varnished in the same way as the puppet heads.

Experiments with texture

Yarn — embroidery 20

The texture in embroidery comes from the surface of the fabric used for the background and any appliquéd areas; from the type of threads used for stitchery; from the stitches themselves and from any trimmings such as braids, buttons or beads.

Texture collection. Before starting a project where texture is to be the major feature it is advisable to look at a range of modern fabrics and threads, studying them for their individual tactile qualities. Although linen, wool, silk, cotton and velvet have traditionally been used for centuries in embroidery, the choice of fabrics has broadened considerably because of the manufacture of synthetic fibres and the influences of collage.

No fabric is really unsuitable for appliqué, and candlewick, corduroy, terry towelling and tweed will blend with corded silk, cheesecloth or vegetable netting providing the desired effect is created.

Many fabrics will suggest effects of a pictorial nature: for example, grey shiny satin could convey the feeling of a glimmering expanse of water and soft velvet could be a smooth, mossy patch.

Threads are as numerous as fabrics. As well as the traditional embroidery threads, look at knitting and rug wool, crochet cotton, string and lurex. You can even create threads by withdrawing them from fabrics or by cutting fabrics, old tights or knitted garments into strips for use as 'threads'.

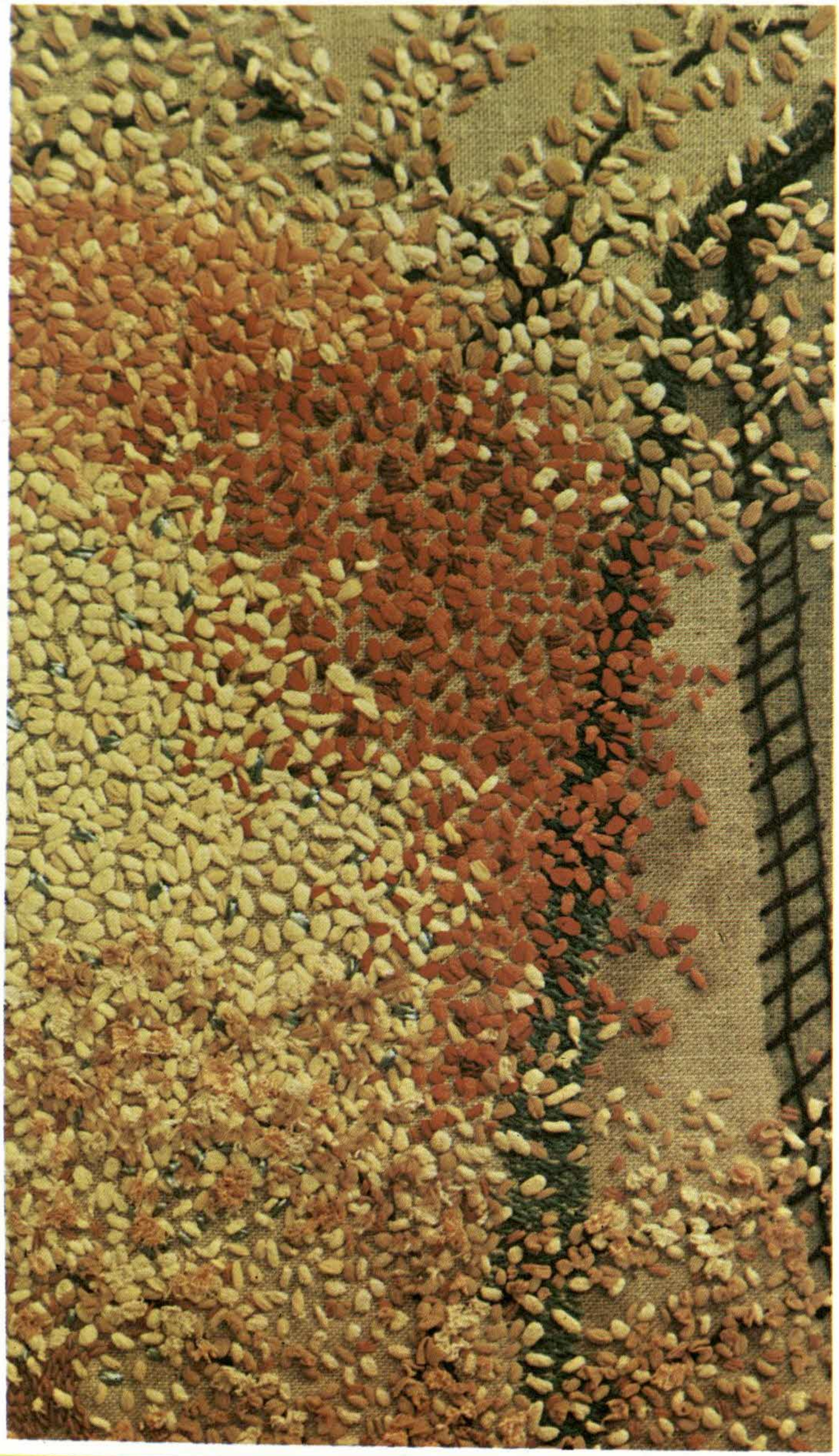
It is helpful to collect various textures into categories, such as fine and silky, rough and natural, net, lace and meshlike, knitted and synthetic. It is also worth collecting different textures in tones of one colour so that you can compare them, for example red velvet with red satin.

Sample book. Cut out the fabric samples in squares and stick them next to each other on a sheet of card or firm piece of background fabric such as hessian. Threads could be wound into figures of eight or be coiled before being stuck down.

Similar charts could be made for other materials such as beads, sequins, buttons, ribbons or braids.

Texture with stitches

It is quite unnecessary to have a practical knowledge of a large number of different stitches. To obtain texture from embroidery it is more important to be able to use a few basic stitches inventively. It is not important to form each stitch perfectly and evenly:



'Blossom in a Country Lane', designed by Diana Tong. The texture comes from the stitches worked with dyed strips of old nylon tights and stockinette cloth on a hessian background.

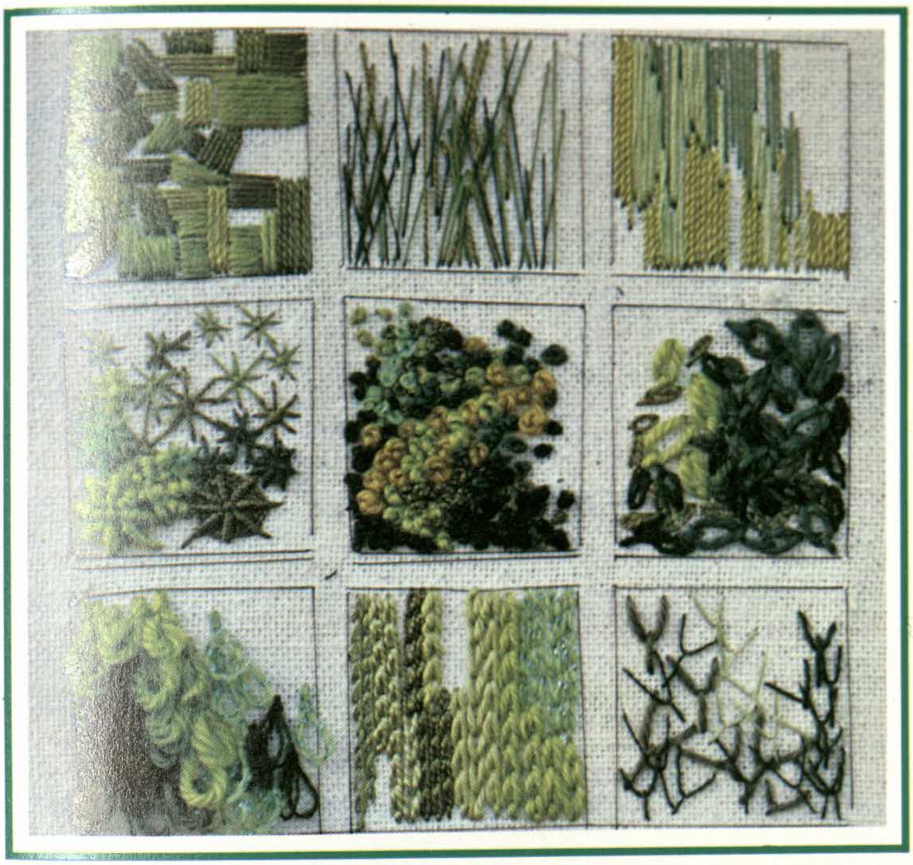
Elizabeth Ashurst

it is the effect of the stitches in groups which creates texture.

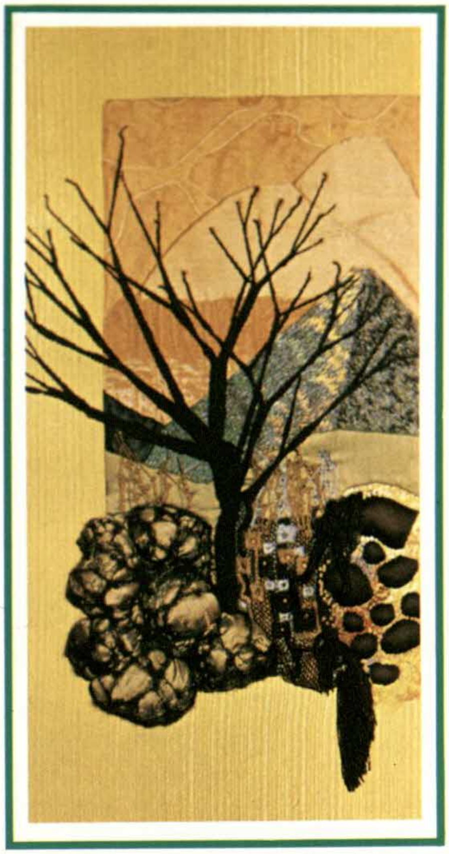
Making a sampler. Try making a sampler of stitches to create different textures. Use a variety of threads in tones of one colour, ranging from light to dark, and a small piece of firmly woven fabric, about 30cm (12") square.

☐ Divide the fabric into thirds and tack a grid of squares to make nine in all, each measuring 7.5cm (3").

☐ Work one stitch in each square, with different thicknesses of thread and stitches of varying sizes to create an attractive texture.

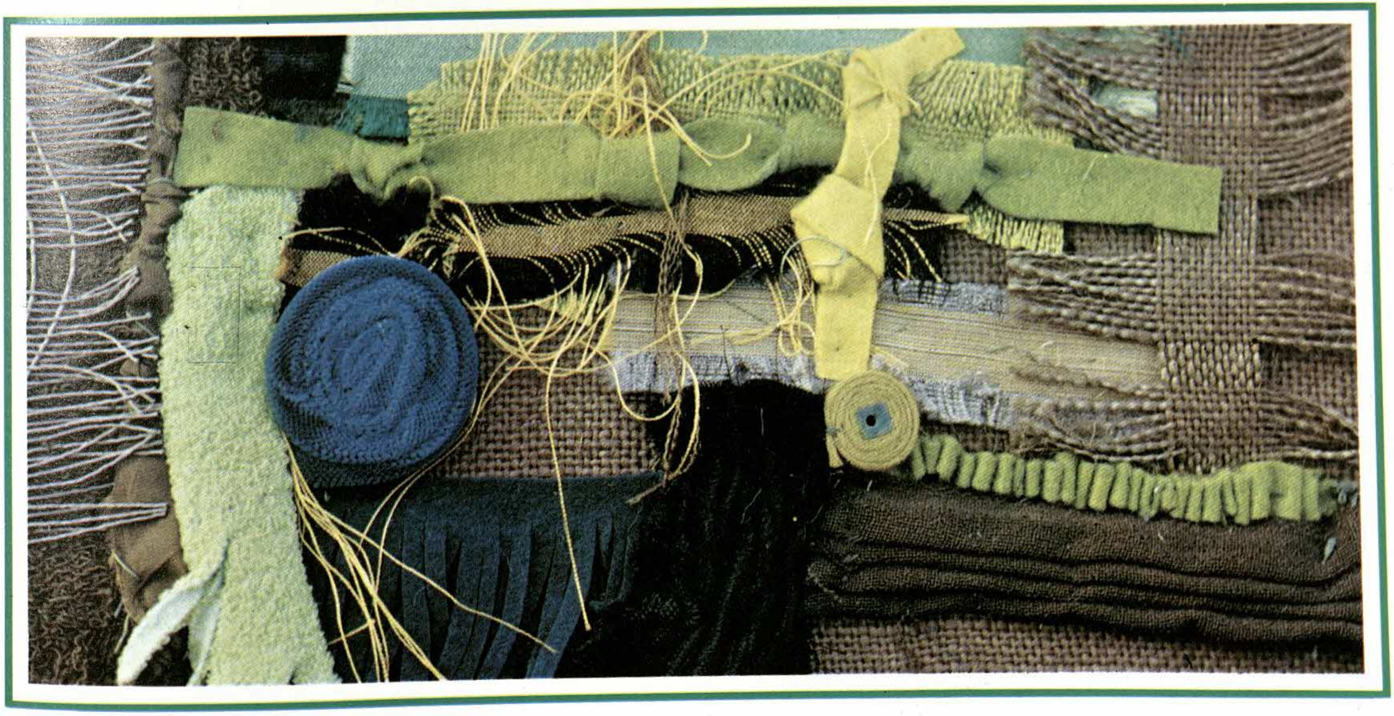


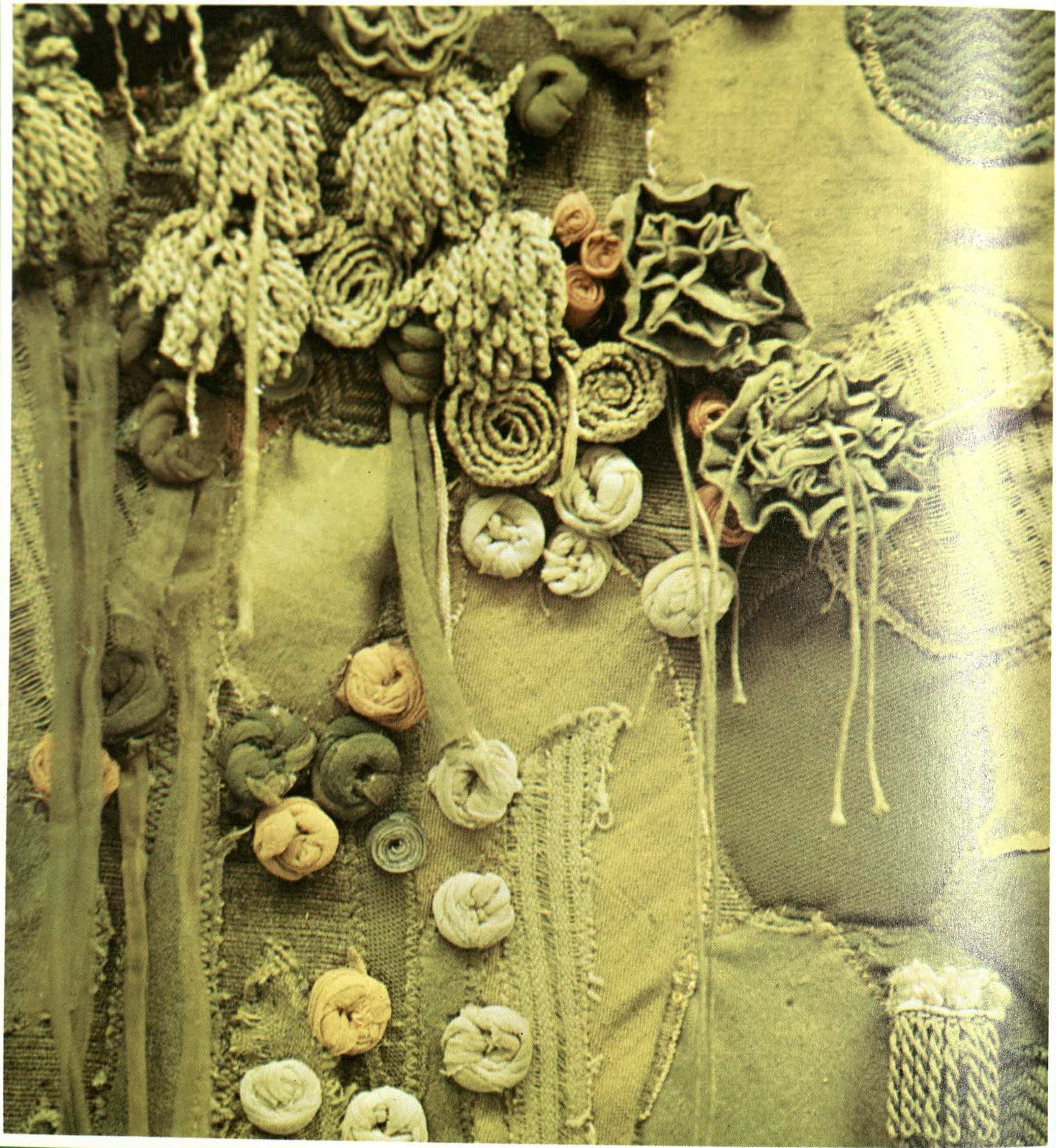
Sampler of the different textures made with various thicknesses of yarn and such simple stitches as long and short, spider's webs, French knots, chain, Surrey knots and fly.



'Golden Landscape', designed by Judith Johnstone of Doncaster College Broderers. The texture is made by combining padded and flat appliqué, macramé and machine embroidery.

Below: scrim, felt, velvet and fun fur are frayed, knotted, pleated, gathered and cut into fringe in this experimental exercise in manipulating fabrics for texture by Elizabeth Ashurst.





Elizabeth Ashurst

Texture with fabrics

Although appliqué and collage are two of the most popular ways of adding texture, there are other methods you can use.

Padding. This gives contours to the fabric.

☐ Decide the shape of the contour and cut it out from a piece of polyester wadding. For a thick pad use several layers of wadding, making each one slightly smaller than the last.

☐ Build up the layers with the largest at the top and the smallest at the bottom.

☐ Place the pad on to the wrong side of the fabric which is to cover it and cut round to the size of the largest layer, leaving 1.5cm (½″) for the turning. Fold the turning on to the pad and tack to hold in place.

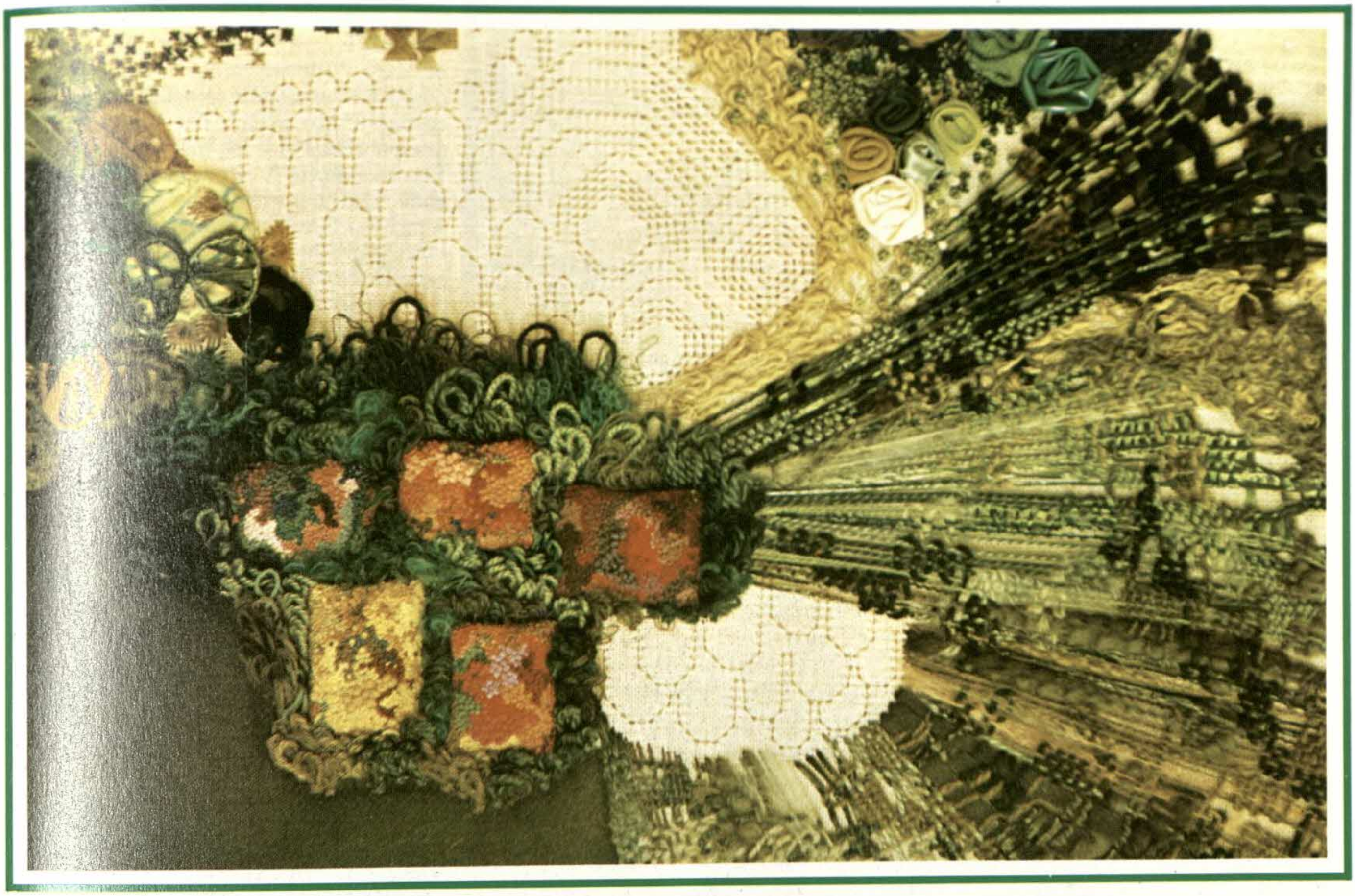
☐ Place the pad, right side up, on the background fabric and slip stitch in position.

Coiling. Almost all fabrics and trimmings are suitable for this method.

Braids, fringes, dyed tights cut into strips and knotted, and fabrics, some with drawn threads and some coiled, gathered, appliquéd flat or with padding, make the various textures in 'Seaweed' by Ursula Boundy.

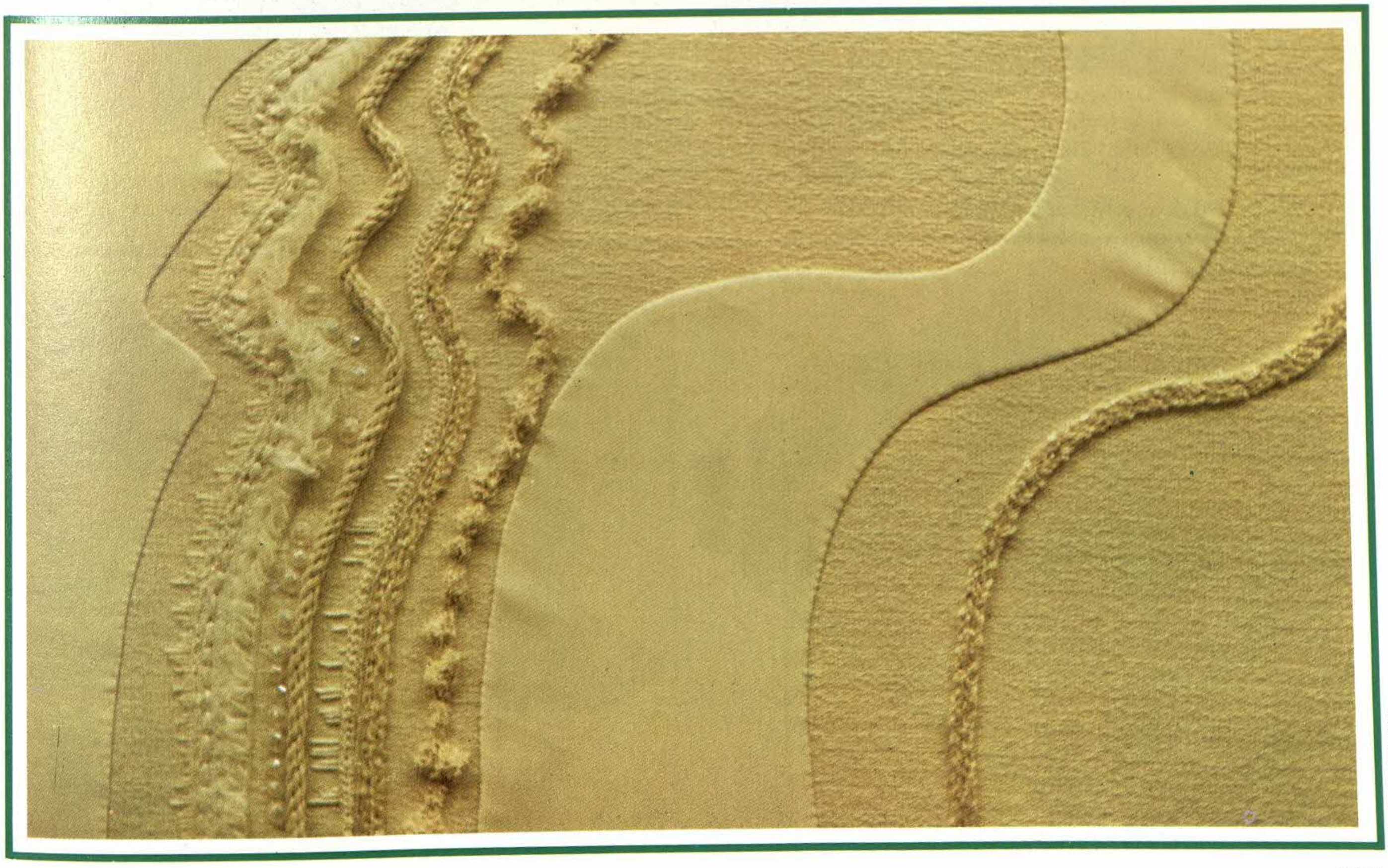
☐ Cut fabrics into strips varying from 5mm-2.5cm (¼″-1″) wide and roll them into coils. You could add texture to some fabrics by fraying the edges.

☐ Place on the background fabric and sew or glue in place.



Above: pulled work makes an unusual contrast to the richness of applied yarns, fabric coils, colourful French knots and wool loops in 'Fields and Flowers' by Celia Batorijs.

Effective use of one colour with different appliquéd braids and fabrics supplying the sophisticated texture in 'Round the Bend' by Emily Taylor.



Elizabeth Ashurst

Making and fitting drawers

Drawers are one of the most economical and practical ways of utilizing the space in the larger units of the modular system. All drawers consist basically of a four-sided frame with runners on which the drawer slides. The frame is fitted with a base usually of a thinner material. The base helps to hold the frame square as the sides of the drawer must be parallel to operate properly.

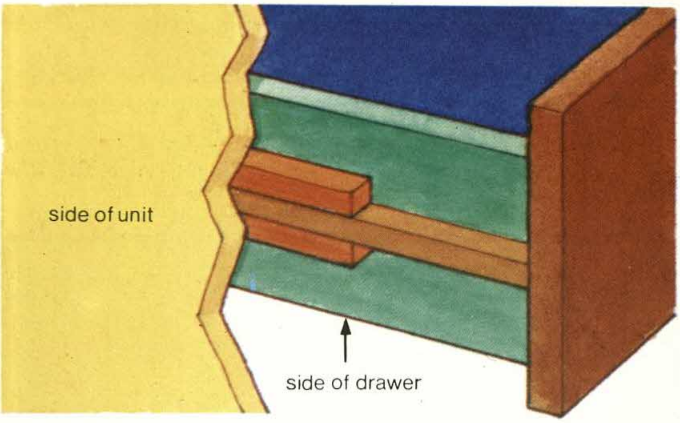
The runners, which can be either cleated or recessed (fig.1a and b), must also be parallel to the runners fitted on the sides of the carcass. Great care must be taken with this aspect of construction in order to make a successful drawer.

Drawer fronts. These can be of two shapes: lay-on (also known as over-width) and inset as shown in fig.1a and b. The inset front drawer is a plain box with all the corners and edges flush. Because the front does not project beyond the sides, any inaccuracy in the fitting of the drawer runners will show. The lay-on front is more generally used on modern furniture. If using the three-cleat technique (see fig.1a), always use the lay-on front as the front projects to conceal the runners.

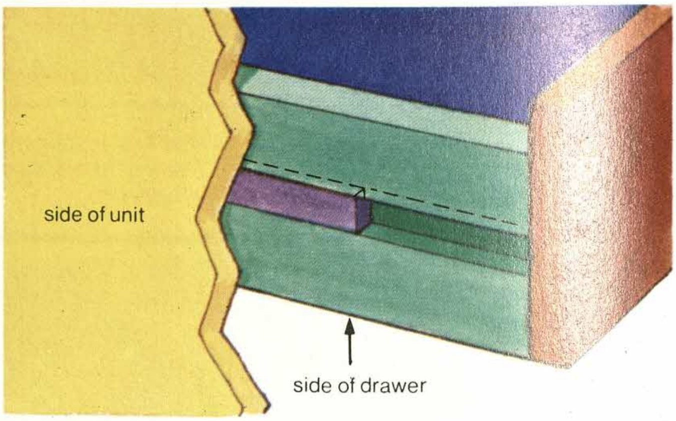
Three-cleat technique. A cleat (wood or plastic strip) is fitted to the centre of each drawer side. Two parallel cleats are attached to each side of the carcass, into which the cleat on the drawer slides (see fig.1a).

The technique is not suitable for very wide and heavy drawers as all the weight is taken on the two cleats. The large gap down each side of the drawer accommodating the cleats on the carcass is concealed by lay-on fronts.

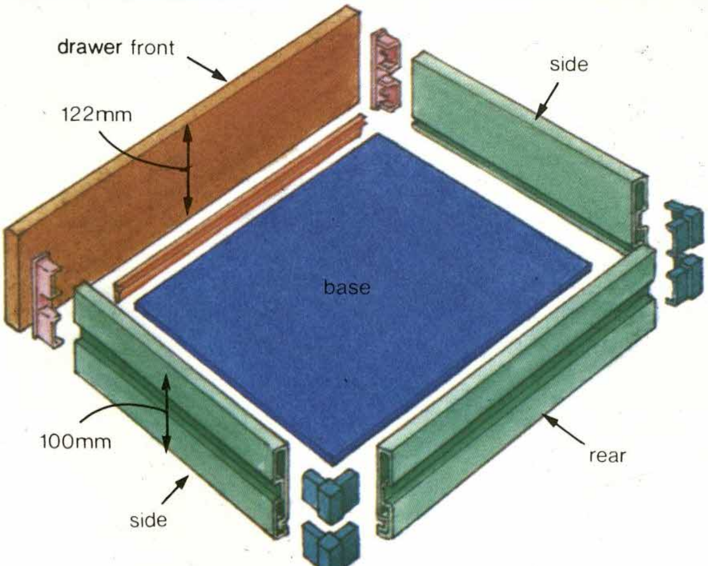
Cleat-and-groove technique. Drawers using this technique are harder to build than those with the three cleats. A single cleat is fixed to each side of the unit which fits into a groove cut along the sides of the drawer (see fig.1b). If the groove is made as deep as the thickness of the cleat, the drawer can be made the full width of the space into which it fits. Allowance must be made for shrinkage and/or expansion of the wood. (This, of course, does not apply to ready-made plastic drawer kits.) The groove stops short of the front of the drawer. If the drawer is made entirely from wood, the



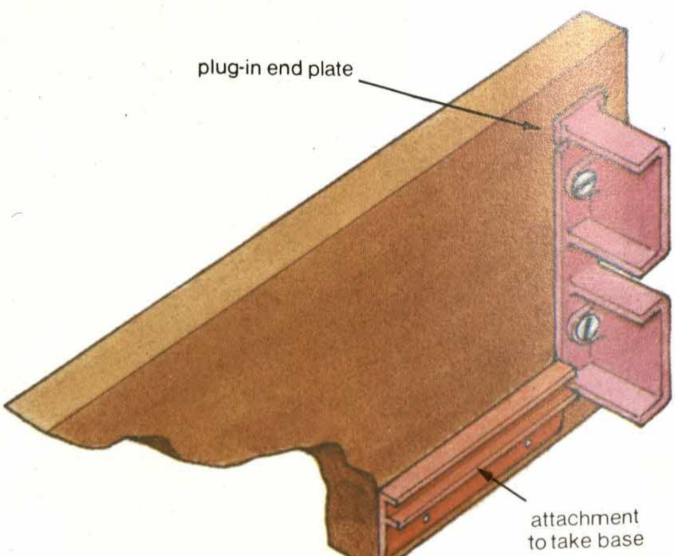
1a. *Three-cleated drawer fitted with a lay-on front.*



1b. *Cleat-and-groove drawer with an inset front.*



2a. *Assembly diagram of drawer kit showing corner joints.*



2b. *Drawer base support screwed to bottom of drawer front.*

groove must be cut with a plough plane. Because of the problem of friction, chipboard sides are unsuitable for this type of drawer. In order to eliminate the friction problem with drawers, the cleats should be made of hardwood.

In recent years the development of plastic-moulded drawer components has made drawer making a lot easier. There are a number of ready-made drawer kits available, such as Sheerglide, which consist of 200cm (80″) lengths of moulded plastic. These are cut to the required size and joined at corners with special fittings (fig.2a).

Making a drawer

The following instructions are for a lay-on front plastic drawer which operates on the cleat-and-groove technique. The drawer is made to fit a square unit, 50cm x 50cm (20″x 20″); four drawers each with a side profile of 100mm (4″) can be fitted into a unit this size. When fitting drawers, keep in mind the depth of the unit—short drawers are impractical.

You will need:

Three plastic drawer sides 100mm wide: one 43.7cm long, for back; two 3cm shorter than depth of unit, for sides.

Two corner pieces and two plug-in end plates for assembling.

3mm hardboard base 450mm wide and depth 1.2cm longer than sides.

One pair of plastic drawer runners, cut to match length of sides.

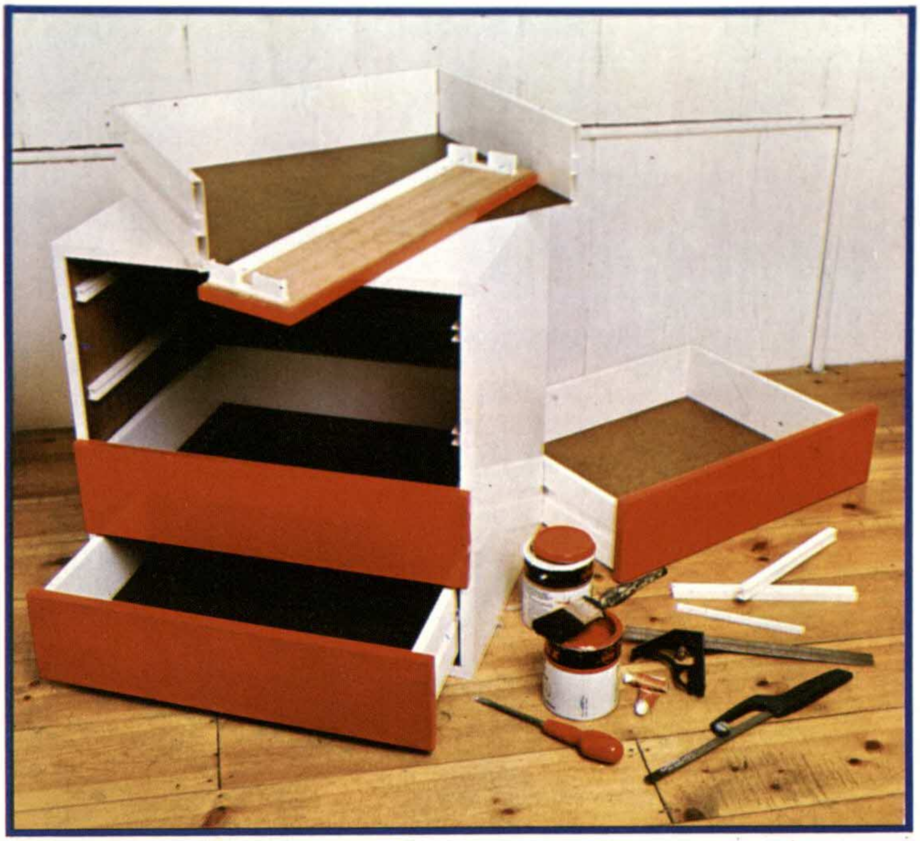
Note: for inset drawers reduce the length of sides and depth of base by 20mm.

The drawer front is cut from 16mm thick Contiboard, 49.4cm long x 122mm wide for lay-on drawers (46.5cm x 115mm for inset drawers).

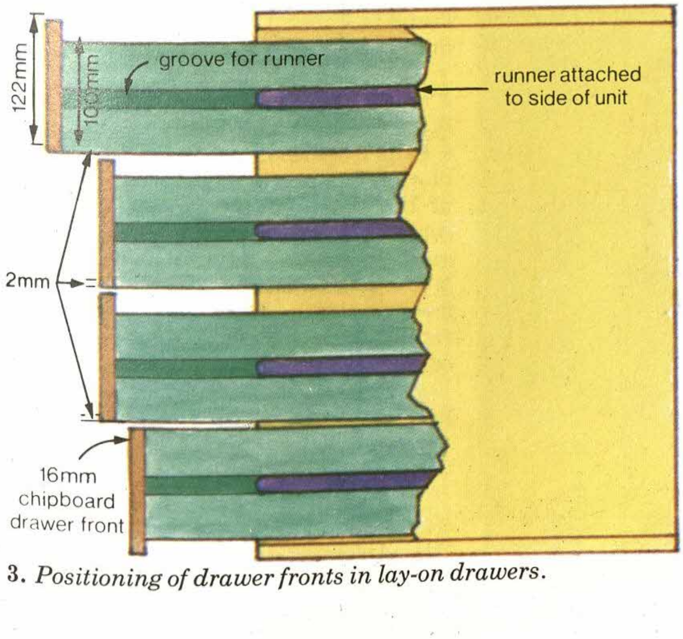
The drawer front is fitted to the sides with plug-in end plates which are screw fixed with chipboard screws to the back of the drawer front (fig.2b). For each set of four drawers, the bottom edge of the drawer front for the top three drawers is flush with the bottom of the sides. The top of the bottom drawer front is flush with the top of the drawer sides (fig.3).

Before fixing the drawer front, mark a 3mm groove to take the baseboard. This can either be cut with a circular saw, or a special fitting to take the base can be attached to the inside of the front (see fig.2b). Place strips of veneer on the top and ends of the front only.

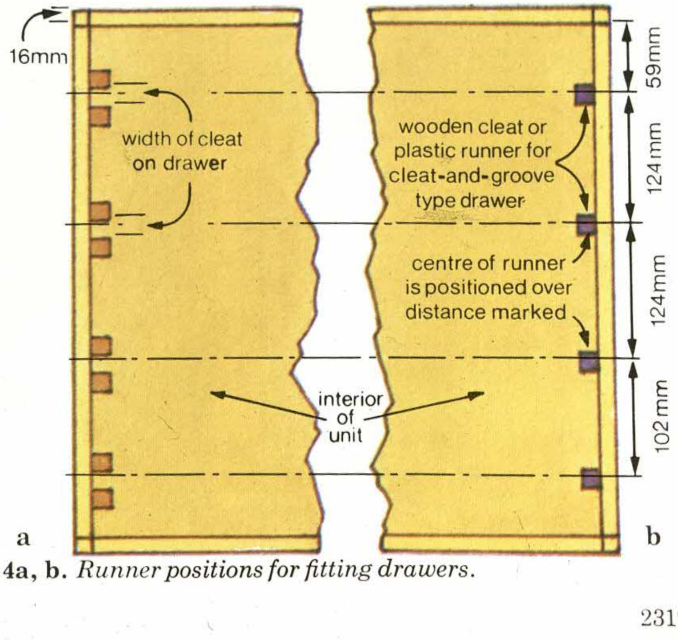
Position runners or cleats on carcass as shown: fig.4a gives positions for three-cleated drawers; fig.4b gives positions for plastic runners and cleat-and-groove drawers with lay-on fronts. Assemble the drawer and check that it fits the carcass. Dismantle, make any necessary alterations and then rebuild, fixing the corner fittings with a small amount of plastic adhesive. Slide the base into place and attach the front of the drawer. Fit or cut handles and finish the drawer front as required.


Kim Sayer

A drawer kit with lay-on fronts fitted into a unit 50cm square and 38.1cm deep.



3. *Positioning of drawer fronts in lay-on drawers.*


16mm
width of cleat on drawer
wooden cleat or plastic runner for cleat-and-groove type drawer
centre of runner is positioned over distance marked
interior of unit
59mm
124mm
124mm
102mm
a
b

4a, b. *Runner positions for fitting drawers.*

Paul Williams

Appliqué blocks for patchwork

Cloth — patchwork 9

In Patchwork chapters 7 and 8, pages 2110 and 2214, instructions are given for making pieced and pressed blocks and setting them together to form a quilt. There are two more methods of building blocks, which fall under the general heading of quilt construction by blocks. Blocks can be formed by using a combination of piecing and appliqué or simply by using appliqué alone.

Appliqué is an art that has been practised for centuries. Fine examples of it have been found in the tombs of Ancient Egypt. It was brought to Europe in the 11th and 12th centuries by the Crusaders and was much used on battlefield banners and on ecclesiastical vestments and hangings.

Imported to America in the 18th century by British settlers, appliqué was later incorporated into the block method of quilt construction. Quilts made up of simple appliqué repeats were often regarded as 'best' quilts—reserved for guests—since their construction demanded that cloth be purchased specially for the project, rather than using scraps.

Special presentation quilts were often made at quilting bees; each person worked an applied block of her own choosing, and signed her name in embroidery. The finished quilt—a show piece of appliqué designs—was presented to a local esteemed person such as the preacher or school-teacher.

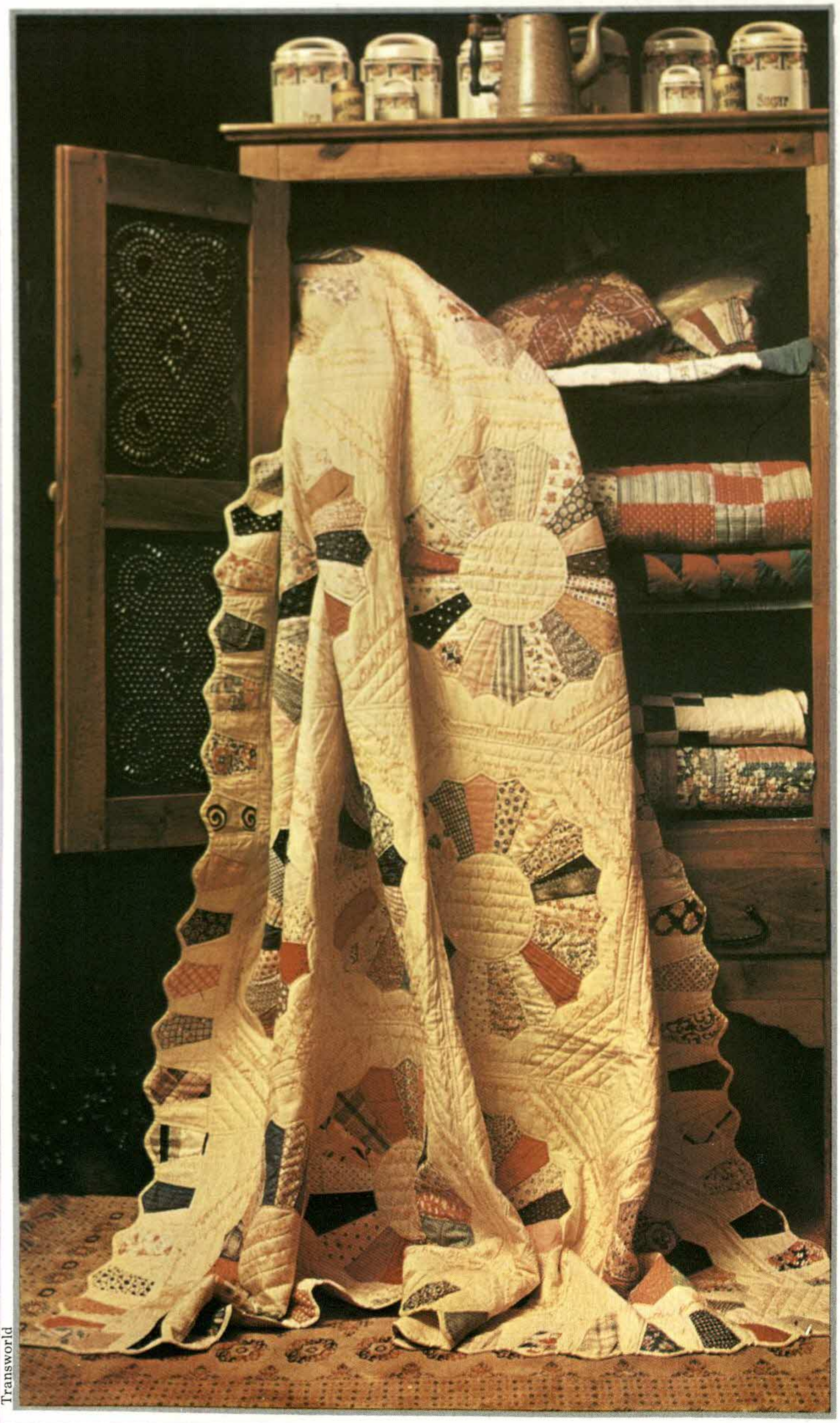
The bridal quilt was always adorned with an appliquéd heart and it was considered bad luck to include a heart on any other quilt.

Appliquéd blocks tend to be more naturalistic in design than pieced ones, as the applied technique involved frees the worker from the necessity of keeping all the seams straight as in the pieced or pressed blocks. The traditional applied designs display a refreshing delight in the flowing lines found in natural forms such as flowers and trees.

Planning

It is most important when constructing a quilt from appliquéd or combination blocks to plan the finished design. One of the most effective methods is to repeat the same design all over the quilt.

It is a good idea to experiment with a few sample blocks to gain practice in coping with pointed ends and curved edges, and to help you choose a design. You will also be able to estimate your fabric requirements in this way. Always be sure you have enough fabric to finish the whole quilt—it may be



No two blocks are identical in this American Dresden Plate quilt, embroidered with the story of its origins.

Transworld

difficult to match it up at a later stage.

Fabrics

As in all patchwork, cotton fabric is the most suitable; one of the joys of patchwork, however, is to use your old scraps of fabric so you may prefer to let availability dictate your choice. The only general rules when working applied blocks are to avoid very heavyweight fabrics that are difficult to pull a needle through—especially if you are sewing by hand—and fabrics that fray too easily.

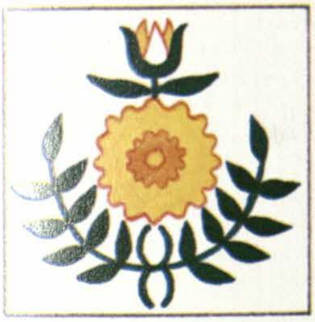
Woollen fabric can be used for the foundation, but its natural 'bounce' makes it difficult to handle for applied shapes.

Appliquéd blocks

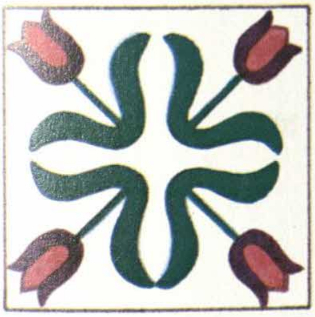
First choose a design. Trace patterns are given for a Rose of Sharon block (page 2324). Other designs are shown in fig.1. You can enlarge a drawing of a favourite motif to the required size or you can create your own design.

Appliqué is not a difficult craft, but better, faster work will result if the right tools are used.

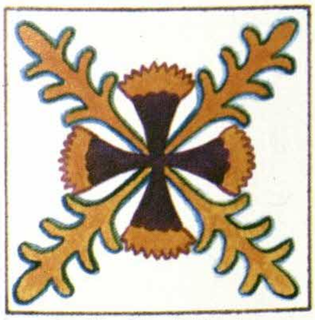
1



Prairie Flower.

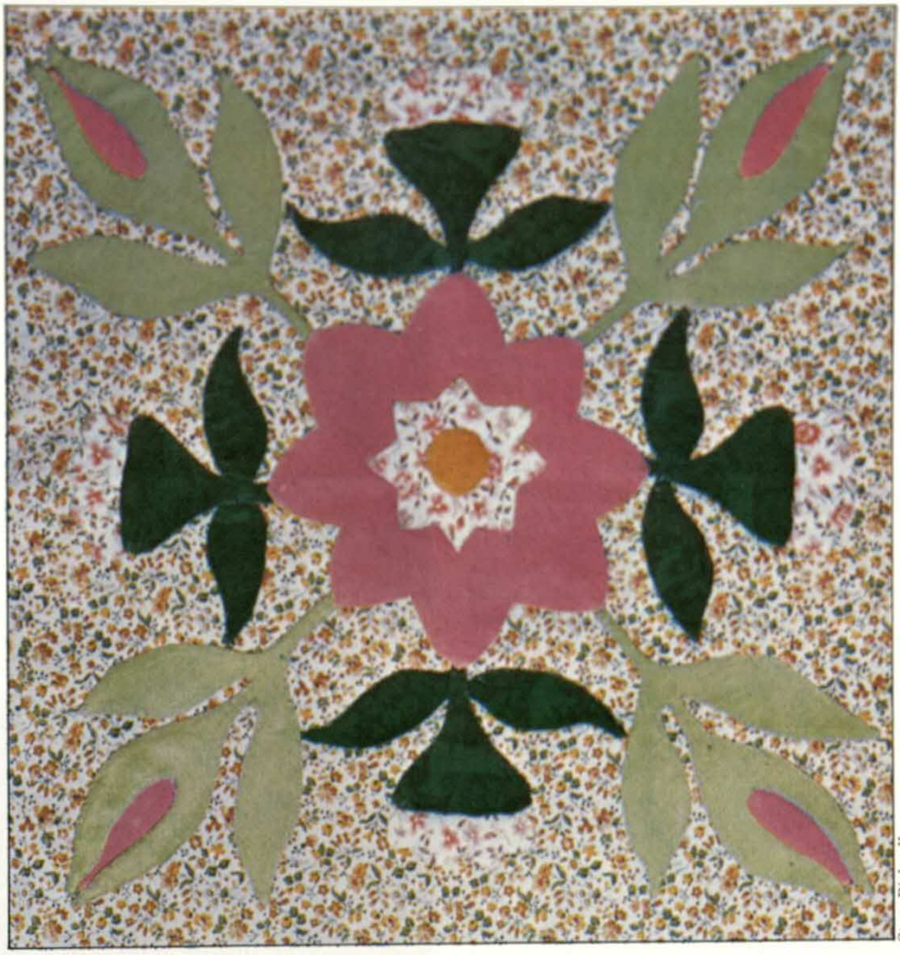


Tulip.



Cock's Comb Pattern.

Coral Mula



Steve Bicknell

Above: this Rose of Sharon block, designed by Helen Tynan, displays a traditional use of colours.

Camera Press

Grandmother's Fan—the fan is pieced together and applied to the foundation.

Melvin Grey

Child's cot quilt, designed by Helen Tynan, combines piecing and appliqué.

You will need:
Dressmaking shears for cutting foundation squares.
Fine embroidery scissors for cutting out small shapes.
Seam ripper for turning under seam allowance and picking out tacking.
Fine sewing needles that will not make large holes in the fabric.
Silk dressmaking pins which will not leave any holes in the fabric when removed.
Thimble—it is worth getting used to working with a thimble—it protects your fingers and results in more rapid work.

☐ Decide on the size of the foundation squares—the average size for applied blocks is 35cm (14″) square. Make a window template for the foundation squares as for the pieced and pressed blocks to ensure that they will fit together accurately when set. Allow 6mm (¼″) all round for seam allowance. (To make window templates see Patchwork chapter 3, page 208.)

☐ Cut out enough foundation squares to complete the quilt.

☐ Trace all the shapes that make up the appliqué design on to thin card and cut round the pencil lines to make templates.

☐ Lightly trace round the card shapes on the right side of the chosen fabrics. Cut out the fabric shapes 6mm (¼″) from the pencil line for a seam allowance.

☐ When you have cut out all the units of the appliqué design, you must turn the seam allowances under to the wrong side of the fabric, folding along the pencil line, and tack in place. Tacking stitches must be removed when the block has been assembled. As you gain confidence, you may find that it is sufficient simply to pin the seam allowance under. (For detailed instructions on how to mitre corners and clip curved edges to ensure that the patches lie flat, see Appliqué chapter 2, page 350.)

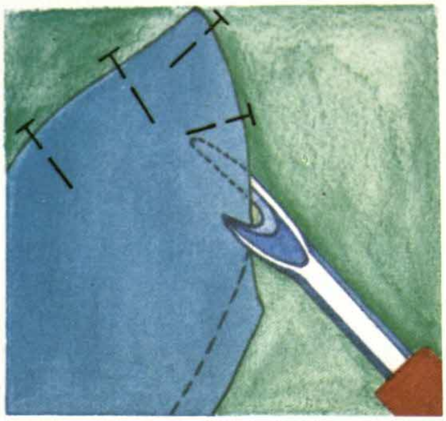
☐ The hemmed patches can then be applied to the foundation block. It is useful to draw light pencil lines or work tacking stitches diagonally across the foundation square to establish the centre and provide guidelines for assembly. A quick way of doing this is simply to fold the square in half diagonally and then in half again, and to use the fold lines as guides.

☐ Position the large units of the design on the foundation square first, pinning them in place, then the smaller ones.

An extremely quick method of applying the patches to the foundation square is to use a seam ripper (fig.2). This enables you to do both stages of the operation in one go—to turn under the seam allowance as you pin the patches to the foundation block.

☐ Turn under a short length of the seam allowance and pin the patch to the foundation square.

☐ Starting near this first pin, insert the longer tooth of the seam ripper under the piece you are applying, with the shorter tooth on top of the fabric (see fig.2).



2. *How to use a seam ripper.*

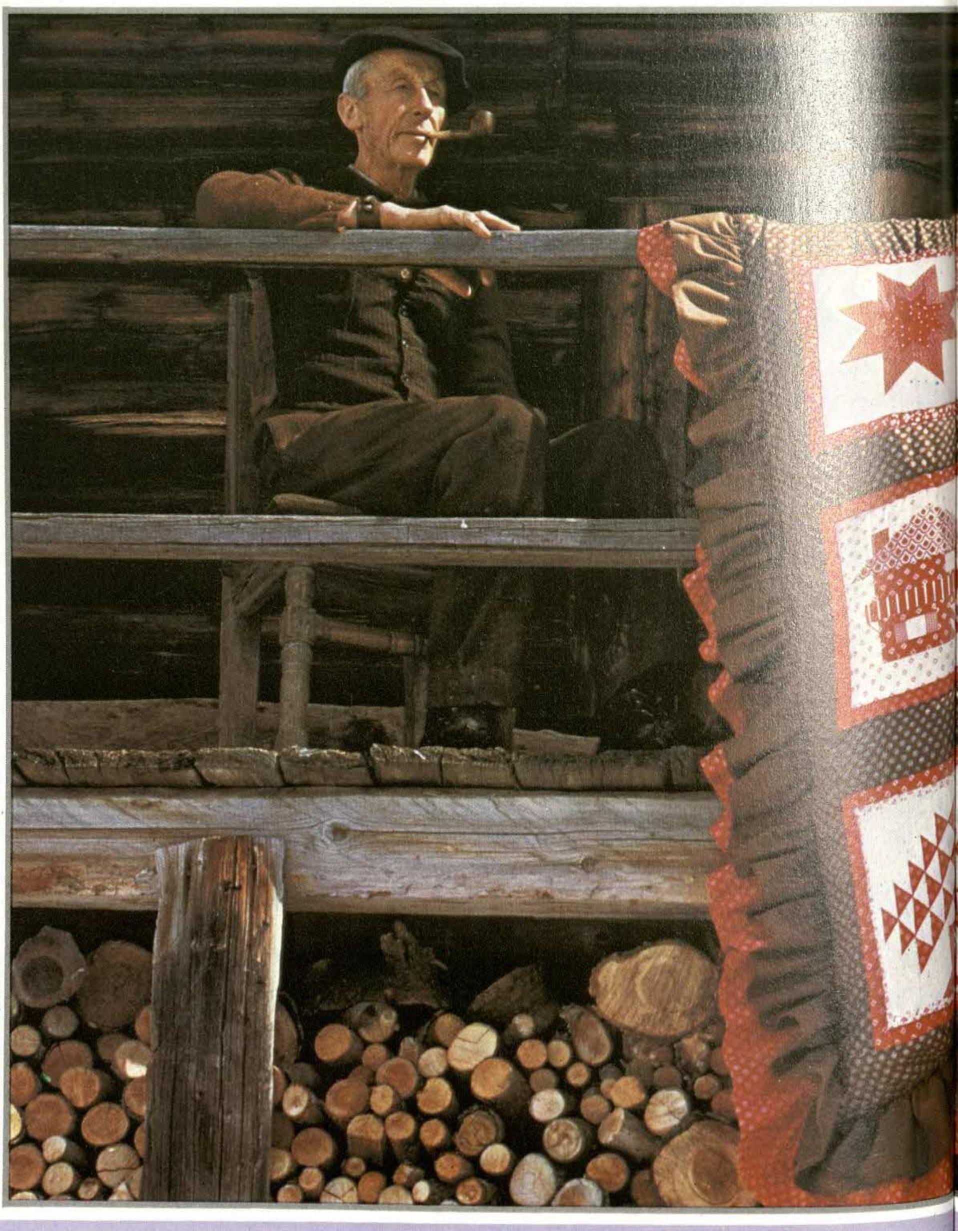
☐ As you pull the seam ripper towards you, it will fold under the seam allowance and you can simply pin the patch in place as you work round it.

Sewing on patches

There are no hard and fast rules in appliqué. The thread you use and the method of sewing are very much up to you.

Traditionally, patches were sewn with small slip-stitches, using thread to match the patches. The stitching was inconspicuous, thus placing the emphasis on the line of the shape and the contrasting colours of shape and background.

There is a great variety of alternative methods, however. You can work the patches in embroidery stitches, such as herringbone or blanket stitch, using a contrasting thread, in which case the pattern outline will be softened, and



Maison de Marie Claire/Dirand

the stitching will become an integral part of the design. (For all hand stitched appliqué, see Appliqué chapters 1 and 2, pages 320 and 350 respectively.)

Machine appliqué is preferable when the finished article is to undergo hard use and frequent washing. This method is obviously less time consuming—though some may argue that it is also less of an art. Patches may be sewn by straight machine stitching or by a zigzag stitch. In the latter case, the seam allowance may be omitted since the raw edges are completely covered. (For machine worked appliqué, see Appliqué chapter 3, page 378.)

Appliqué is a flexible art. As long as the pieces are attached to the background fabric as smoothly and as firmly as possible—the details are up to you.

Combination blocks

Combination blocks are those in which parts of the design are pieced and others are applied. This often results in an unusual mixture of geometric patterns together with the more fluid lines possible in applied work.

Dresden Plate

One of the most famous of the traditional designs is Dresden Plate, sometimes known as Aster or Friendship Ring (see page 2320).

☐ To make this block, make a window template for a 38cm (15″) block, with 6mm (¼″) seam allowance all round.

☐ Make window templates for the petals and central circle from the trace patterns given on this page.

☐ Choose five different cotton prints and pencil round the seam line and cutting line on the wrong side of the fabric. Cut out four petals in each print—20 petals in all.

☐ Cut out one circle in a plain fabric.

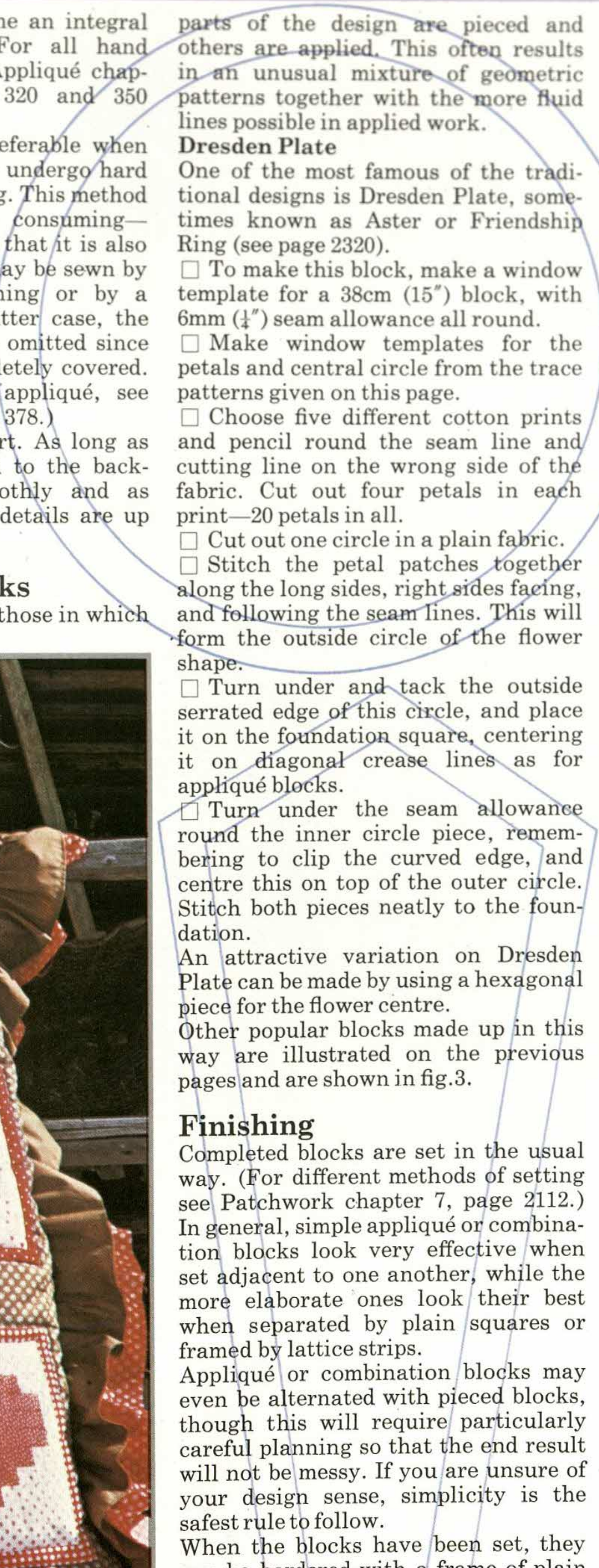
☐ Stitch the petal patches together along the long sides, right sides facing, and following the seam lines. This will form the outside circle of the flower shape.

☐ Turn under and tack the outside serrated edge of this circle, and place it on the foundation square, centering it on diagonal crease lines as for appliqué blocks.

☐ Turn under the seam allowance round the inner circle piece, remembering to clip the curved edge, and centre this on top of the outer circle. Stitch both pieces neatly to the foundation.

An attractive variation on Dresden Plate can be made by using a hexagonal piece for the flower centre.

Other popular blocks made up in this way are illustrated on the previous pages and are shown in fig.3.

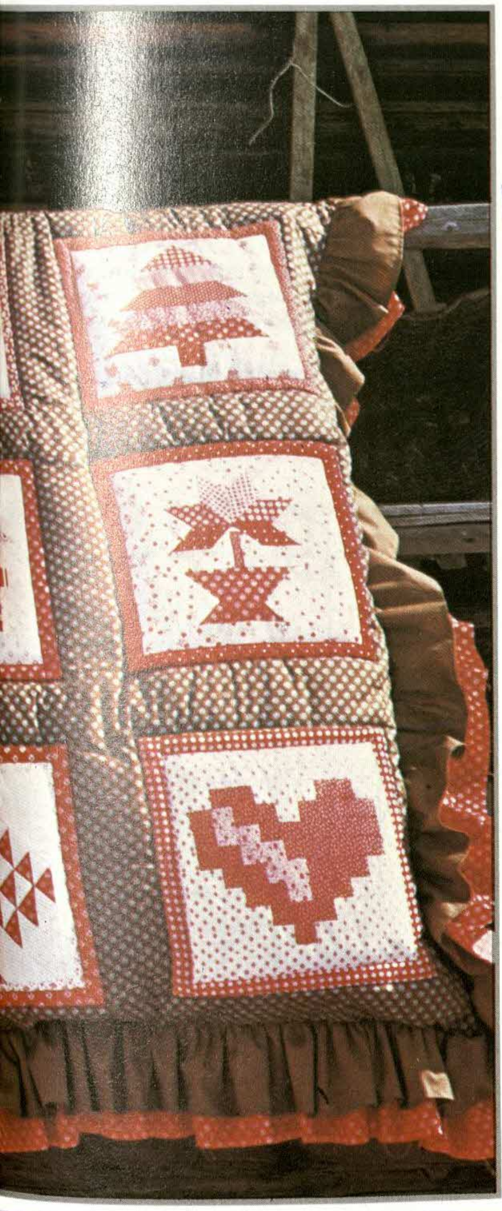


Finishing

Completed blocks are set in the usual way. (For different methods of setting see Patchwork chapter 7, page 2112.) In general, simple appliqué or combination blocks look very effective when set adjacent to one another, while the more elaborate ones look their best when separated by plain squares or framed by lattice strips.

Appliqué or combination blocks may even be alternated with pieced blocks, though this will require particularly careful planning so that the end result will not be messy. If you are unsure of your design sense, simplicity is the safest rule to follow.

When the blocks have been set, they can be bordered with a frame of plain material to echo one of the colours used in the blocks or with an appliquéd frame.



This delightful quilt, with its striking colour scheme, is a show piece of combination blocks, including two traditional designs—Little Beech Tree (bottom left) and Peony (middle right).

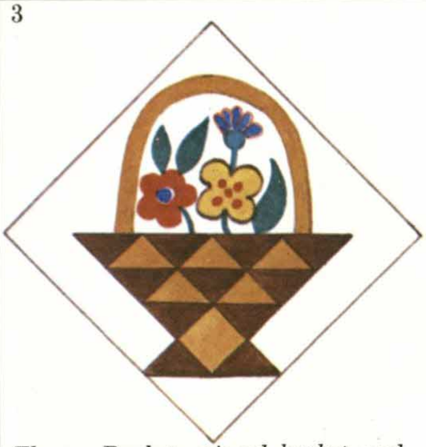
Appliqué borders should repeat the motifs of the main body of the quilt. A general rule is that a vigorous quilt pattern needs a vigorous border, while a more subtle, delicate one demands an unobtrusive border.

As most applied blocks average 35cm (14″) square, a well proportioned border is about 45cm (18″) deep.

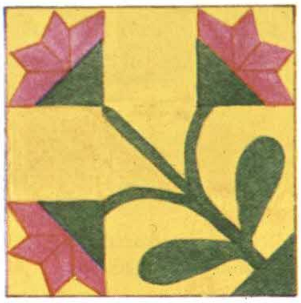
The completed quilt can then be lined and quilted in the usual way (see Quilting chapter 1, page 882).

The outlines of the applied shapes should be followed with small running stitches, while any plain blocks can either repeat the pattern or may introduce a new, but harmonious design.

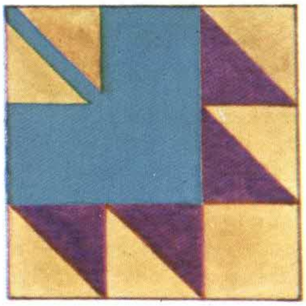
3



Flower Basket—pieced basket and applied flowers.



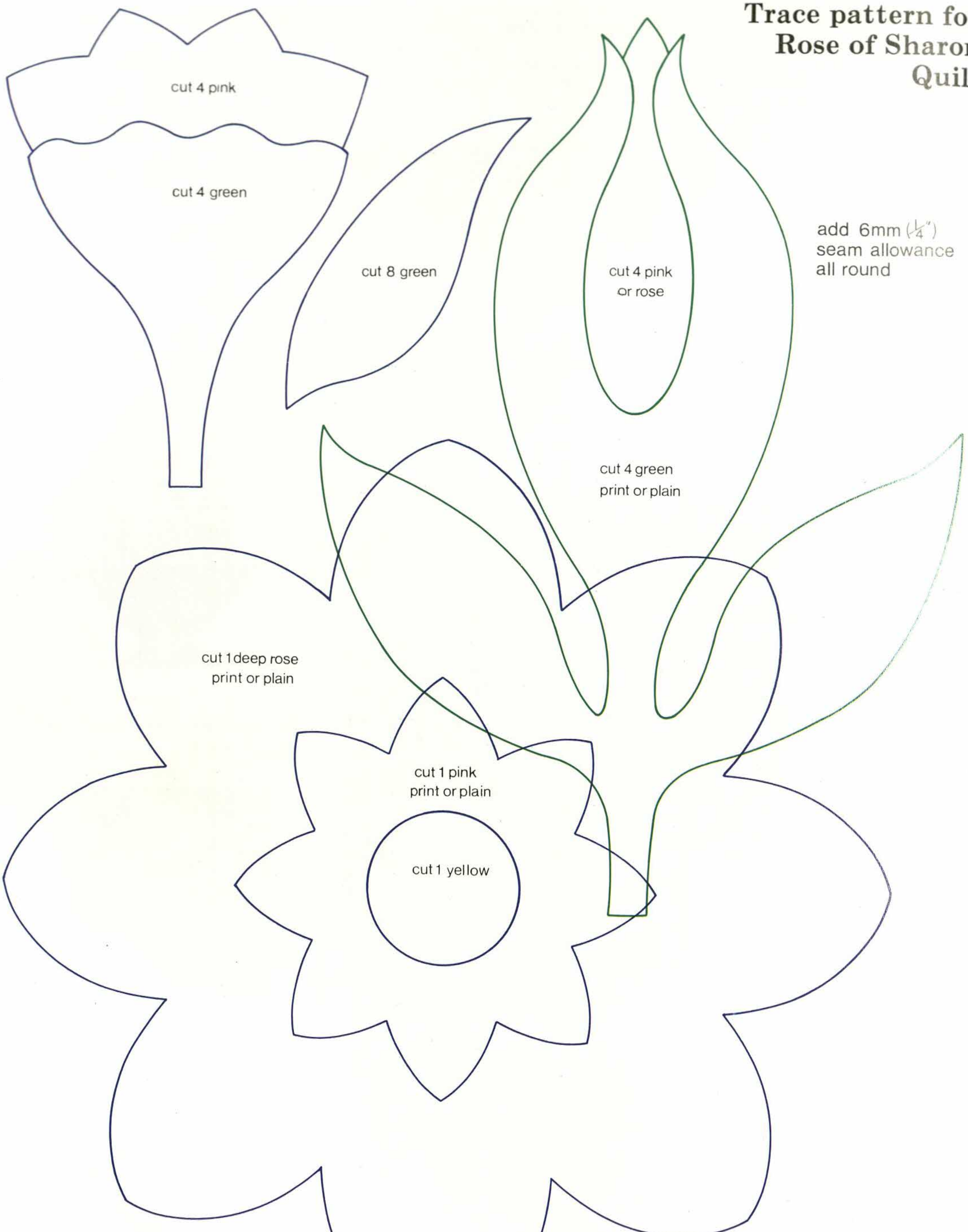
Noon Day Lily—pieced flowers and applied stems.



Maple Leaf—pieced leaf and applied stem.

Coral Mula

Trace pattern for Rose of Sharon Quilt


cut 4 pink
cut 4 green
cut 8 green
cut 4 pink or rose
cut 4 green print or plain
cut 1 deep rose print or plain
cut 1 pink print or plain
cut 1 yellow

add 6mm (¼″) seam allowance all round

Trace patterns for a Rose of Sharon block (without seam allowance). Apply to a foundation square 40cm (16″) square.

Coral Mula

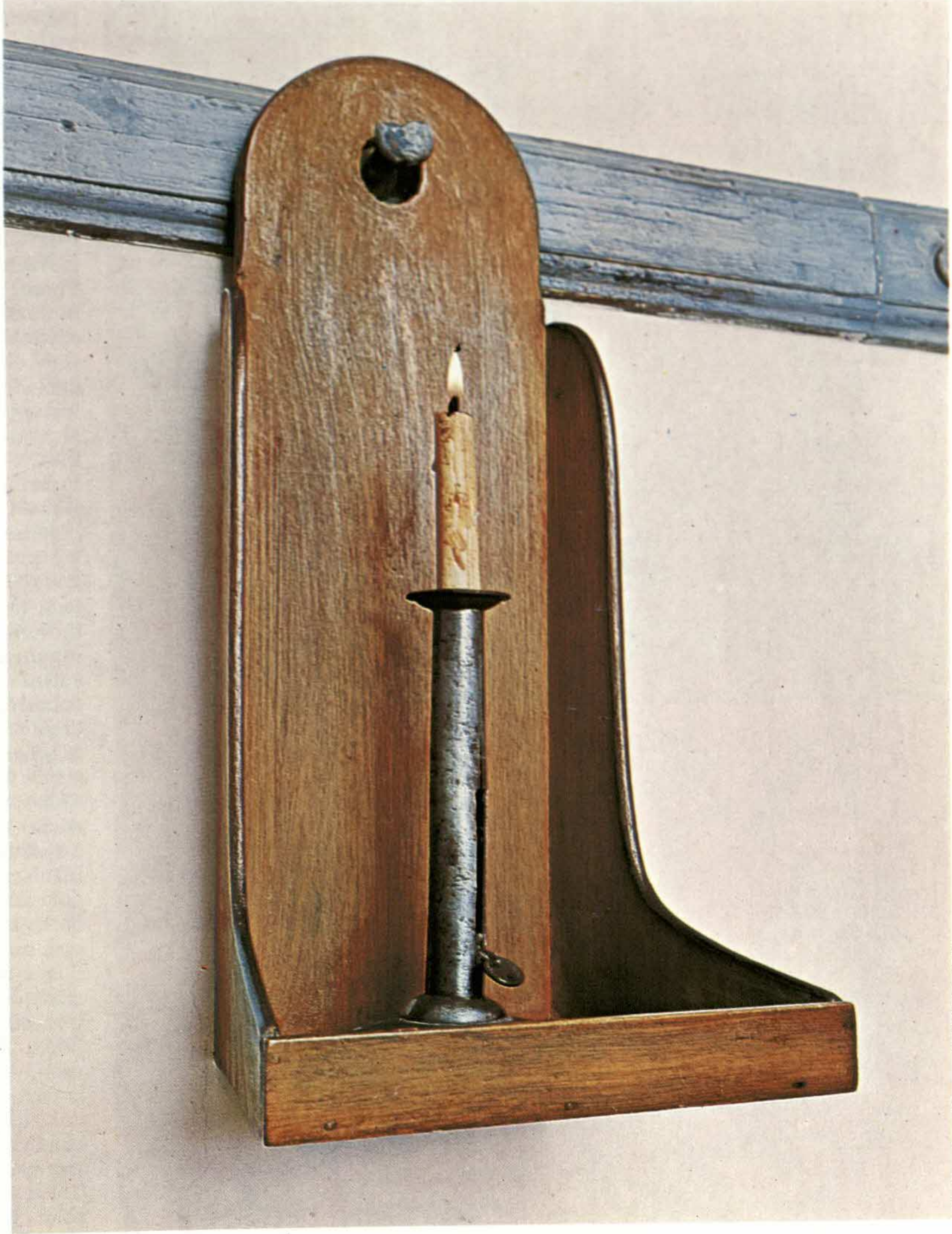
Creative ideas 83

Candle sconce

A sconce is a bracket designed to hold a candle and to give the flame protection.

The instructions here are for a sconce based on a traditional Shaker design, which is shown in the photograph.

Shakers were a religious sect which began in France the late 17th century and later developed in England under Ann Lee, known as Mother Ann. After emigrating to America, she founded the first Shaker settlement at Watervliet, NY in 1776. Hereafter Shakers also included arts and crafts in their lifestyle, especially the manufacture of beautiful furniture.



The American Museum in Britain, Bath

A variable, yet undaunting carpentry exercise.

You will need:

Two pieces of softwood 12mm x 15cm (½″x 6″), 60cm (2′) long and 12mm x 23cm (½″x 9″), 16cm (6″) long for the front and the base.
Coping saw, hammer, plane.
Wood glue, fine grade glasspaper.
Drill with 6mm (¼″) bit.
Panel pins, 2.5cm (1″) long.
Two 6mm (¼″) nails, 2.5cm (1″) long.
Newspaper, tracing paper.
Pencil, scissors.
Polyurethane varnish.
Candle.

Draw and cut out patterns from newspaper for the pieces (fig.1). Transfer pattern pieces on to the wood and cut out a back, two sides, a front and a base (see fig.1).

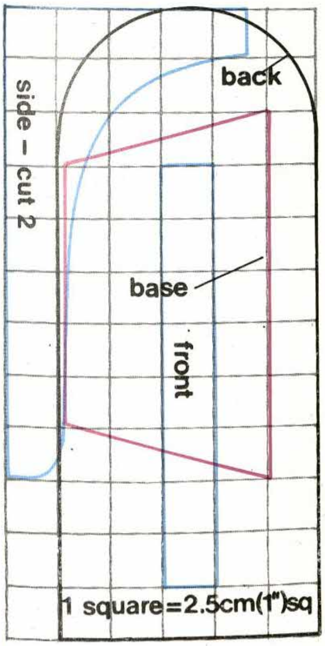
Drill a 6mm (¼″) hole through back. Hammer a nail up through centre of base.

Assemble the back and two sides around the base. Plane the two side pieces to fit flush with the back—this will mean planing at a slight angle. Plane the front edges of the side pieces so that the front piece will fit flush as well. (For instructions on planing see Carpentry chapter 14, page 970.)

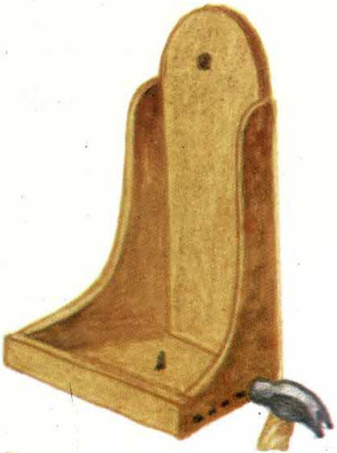
Glue back to base and similarly attach sides and front. Secure with panel pins (fig.2).

Smooth down any rough edges with glasspaper and seal entire sconce with polyurethane varnish.

Attach to wall with nail and insert candle.



1. *shows pattern pieces.*



2. *shows construction of sconce.*

How to make fabric flowers

Cloth — millinery 7

Geoffrey Frosh

These giant fabric flowers make an unusual display that will never wilt.

Fabric flowers can change a simple outfit into something special—and when you make them yourself they add a further touch of originality at surprisingly little cost.

Wear them on a hat, in the buttonhole of a jacket, on a velvet choker or at the neck of a dress. Quick and easy to make, these decorative accessories will add a flourish to old and new garments alike.

There is an enormous variety of flowers that can be made—from large extravagant cabbage roses to sprays of tiny discreet flowers. You can even make giant specimens of these everlasting fabric flowers and brighten up a room with a flamboyant display of them.

Fabrics

Almost any fabric can be used providing the desired petal shape will hold with starching.

It is advisable to select fabrics that lend themselves to the texture of the flowers. The shiny finish of silk and organza, for example, is particularly suited to roses. Crisp, brightly coloured cottons, on the other hand, are suitable for carnations. The use of gingham, as illustrated overleaf, gives a gay and variegated effect.

The sprays of small blossoms can be made from almost any fabric. An unusual idea is to use millium, an insulating lining fabric which has a gold and silver finish on either side; as both sides are visible, this has a striking shimmering effect.

Some flowers—a blossom spray, for example—may benefit from the addition of a leaf for a more professional finish. Again, almost any fabric can be used, but the soft texture of velvet is particularly appropriate.

A touch of realism may be added by shading petals and leaves with fabric paint such as Dylon Fabric Paint.

These suggestions are guidelines rather than hard and fast rules and are intended to inspire, rather than limit you. Adapt the patterns given here, or design your own, to make different flowers. Use real flowers as guides, and be adventurous with fabric textures and colours. If you are a home dressmaker, you can experiment with scraps and even make flowers to match your clothes.

Basic principles

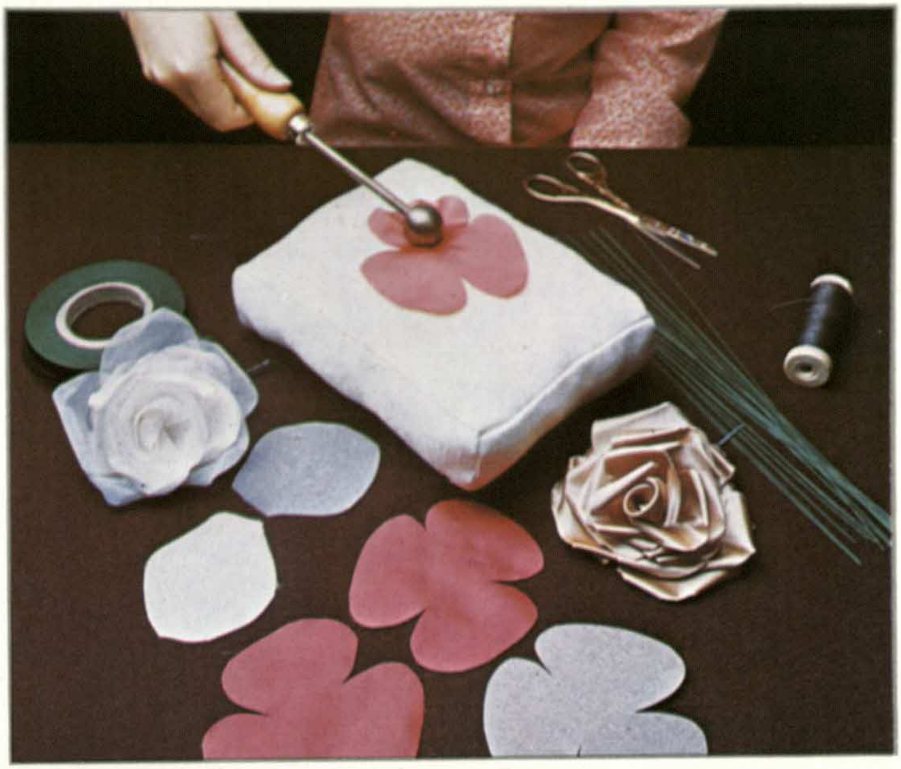
The main technique involved in making fabric flowers is that of 'moulding' the cut-out shapes from flat and lifeless pieces of fabric into realistic petals. The professional artificial flower-maker uses a flower iron to do this—a specially shaped ball on the end of a stick—and a cushion filled with sawdust on which to work.

Beginners who are reluctant to make

this initial investment may, however, find substitutes in the shape of teaspoons or, better still, melon ball scoops, both of which will provide sufficient curve. Do not use your best spoons as they need to be heated. Use a small firm cushion or ironing pad on which to press the fabric.

To heat the spoon, use a camping gas burner, gas stove, or small blowtorch. It is advisable to use an oven glove when heating the spoon in order to protect your hand. Hold the spoon in the flame for a short while, and test the heat by pressing the spoon on to a scrap of the fabric to be used. The length of time required to heat the spoon will depend on the fabric, just as one needs to regulate an iron according to the material.

Place the cut-out petal shape on the cushion and press the back of the spoon on to the fabric to produce the required curve. This may result in a crinkled edge but this can be eliminated later.



Paul Kemp

Moulded rose (right) and single petal rose (left), designed by Pamela Woods.

Patterns

Patterns are given overleaf for two kinds of rose, a blossom for a spray, a carnation and a leaf. It is advisable to make templates in thin card from these trace patterns. You can then draw round the template in pencil on the fabric. Templates ensure accuracy in cutting out, and, once made, they can be used repeatedly.

For all fabric flowers

You will need:

Relevant card template and pencil.
Sharp scissors.
Small, firm cushion or ironing pad.
Old teaspoon or melon ball scoop.
Adhesive such as Copydex.
Florist's stem wire.
Florist's green binding tape for the stems (gutta-percha).
Spray starch.

A rose

You will also need:

30cm (12″) by 20cm (8″) of fabric.
Sharp kitchen knife or metal knitting needle.

☐ Using the rose pattern with three petals given overleaf, trace and cut out six shapes in fabric.

☐ Make a small hole in the centre of each shape with the point of the scissors.

☐ Place one cut-out shape on the cushion or ironing pad.

☐ Heat the teaspoon or melon ball scoop and press the back of it on to the centre of each of the three petals so that their edges curve upwards.

☐ Apply a little adhesive to the top left-hand side of each petal and stick them together so that the side edges overlap (fig.1).

☐ Make a loop in the top of a stem wire (fig.2a). This is to prevent the first set of petals from slipping off when threaded on.

☐ Thread the first set of petals on to the wire.

☐ Make a pleat in the centre of each petal and secure with adhesive so that the petals close up further into a bud shape (fig.2b).

☐ Repeat the moulding process with the other five sets of petals.

☐ Apply a little adhesive to the inside centre, around the hole, of each of the five sets of petals.

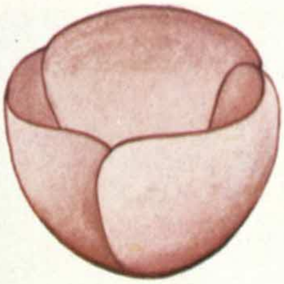
☐ Thread them one by one on to the stem wire, pushing each one firmly under the previous one. Arrange them so that the petals lie in alternate layers (fig.3).

☐ Leave the adhesive to dry.

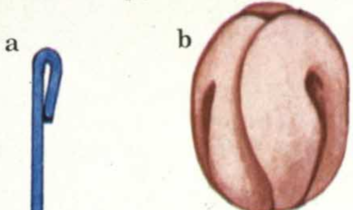
☐ Coat the whole flower with spray starch and place to dry on a colour-fast surface, so that the wet flower does not absorb the colour of the surface. Surplus starch will disappear on drying.

☐ The petals should now be shaped. If you are using fabric that does not fray, use a sharp knife. Holding the blade of the knife between forefinger and thumb, ease the edges of the open petals one by one over the blade with the thumb so that they curve outwards. If you are using fabric that frays, use a heated metal knitting needle. This will also flatten any crinkled edges.

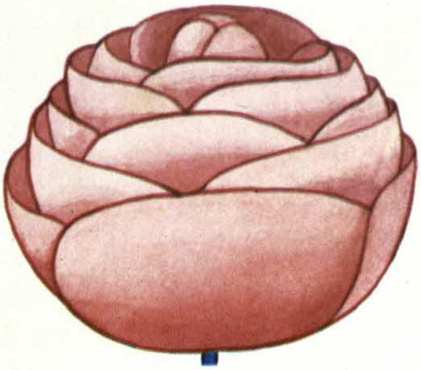
☐ Cover the stem wire with florist's green binding tape, winding it several times round the wire just below the petals to prevent them from slipping down the stem.



1. *Overlap first set of petals.*



2. *Thread petals on wire and pleat.*

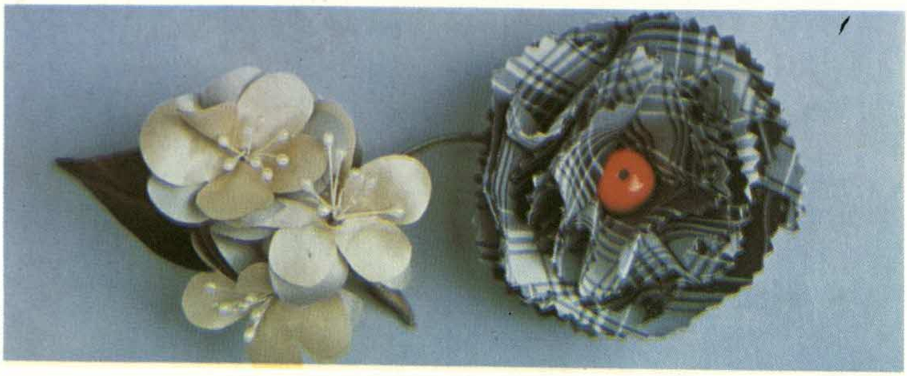


3. *Place petals in overlapping layers.*

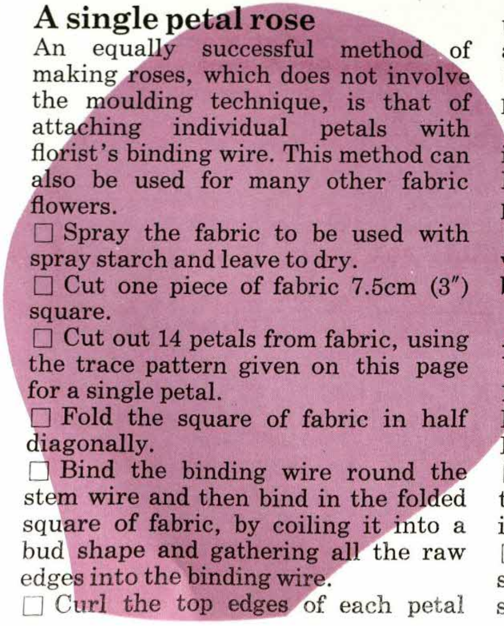
Coral Mula

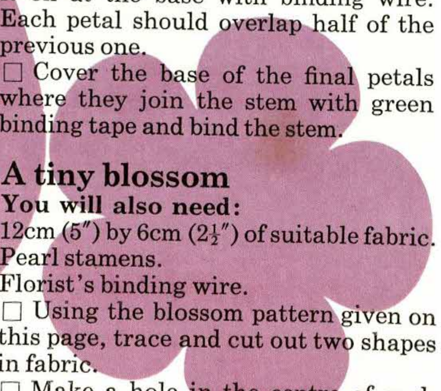
Sandra Lousada

Above: blossom spray and carnation, designed by Pamela Woods. Below: detail.



Geoffrey Frosh





A single petal rose

An equally successful method of making roses, which does not involve the moulding technique, is that of attaching individual petals with florist's binding wire. This method can also be used for many other fabric flowers.

☐ Spray the fabric to be used with spray starch and leave to dry.

☐ Cut one piece of fabric 7.5cm (3″) square.

☐ Cut out 14 petals from fabric, using the trace pattern given on this page for a single petal.

☐ Fold the square of fabric in half diagonally.

☐ Bind the binding wire round the stem wire and then bind in the folded square of fabric, by coiling it into a bud shape and gathering all the raw edges into the binding wire.

☐ Curl the top edges of each petal using a knife or metal knitting needle as for the previous method.

☐ Make a pleat in the base of each petal to form a cup shape.

☐ Join on each petal in turn by binding it on at the base with binding wire. Each petal should overlap half of the previous one.

☐ Cover the base of the final petals where they join the stem with green binding tape and bind the stem.

A tiny blossom

You will also need:

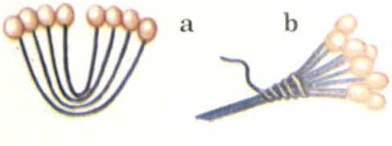
12cm (5″) by 6cm ($2\frac{1}{2}$″) of suitable fabric.
Pearl stamens.
Florist's binding wire.

☐ Using the blossom pattern given on this page, trace and cut out two shapes in fabric.

☐ Make a hole in the centre of each set of petals with the point of the scissors.

☐ Fold four pairs of pearl stamens in half together so that eight pearls are grouped in a bunch (fig.4a).

☐ Bind them tightly at the point at which they fold to the top of the stem wire with binding wire (fig.4b).



4. *Bind pearl stamens to stem wire.*

☐ Mould the petals as for the rose. If you are using millium, treat the gold side as the upper side for one set of petals, and the silver side for the other set. In this way, both the gold and silver finishes will be visible in one blossom.

☐ Thread the first set of petals on to the stem wire and push it up firmly under the stamens.

☐ Apply a dab of adhesive around the central hole of the second set of petals, and thread it on to the stem wire, pushing it up firmly under the first set.

☐ Bind the stem with florist's binding tape, ensuring that there is enough tape just below the flower head to hold it in place.

☐ Spray the finished flower with spray starch and leave to dry.

☐ You can make up a blossom spray with any number of these tiny flowers, depending on how large a spray you require. Arrange the flowers into a group, add a leaf if desired, and bind the stems together with binding tape.

A carnation

You will also need:

30cm (12″) by 20cm (8″) of fabric.
Pinking shears.
One small artificial fruit.
Florist's binding wire.

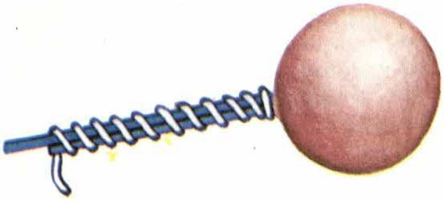
☐ Using the carnation pattern given opposite, cut out six shapes.

☐ Trim the edges of three of the circles with pinking shears.

☐ Trim away 1.5cm ($\frac{1}{2}$″) from the edges of the other three circles so that they are smaller than the first three.

☐ Make a hole in the centre of each circle of fabric with the point of the scissors.

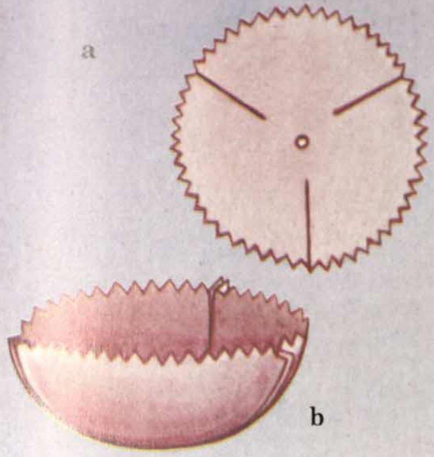
☐ Join the stem of the artificial fruit to the top of a stem wire by binding the two together with florist's binding wire (fig.5).



5. *Bind artificial fruit to stem wire.*

☐ Cut three slits in each circular shape at equal intervals as shown in fig.6a.

☐ Working on each circle in turn, apply a little adhesive to both inner edges of each slit and stick them together so that the flat circles of fabric become cup-shaped (fig.6b).



6. *Make each circle cup-shaped.*

☐ Apply a little adhesive around the central hole of each set of petals. Thread the three smaller sets on to the stem wire first, pushing them up firmly under the artificial fruit. Thread on the other three sets of petals.

☐ Bind the stem with florist's binding tape, wrapping it round the top of the stem, just below the flower, several times to prevent the petals from slipping down the stem.

☐ Spray the completed flower with spray starch and leave to dry.

A leaf

You will need:

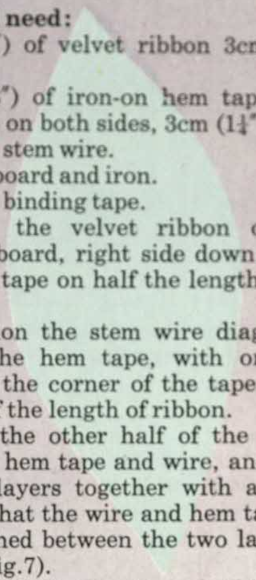
15cm (6″) of velvet ribbon 3cm (1¼″) wide.

7.5cm (3″) of iron-on hem tape with adhesive on both sides, 3cm (1¼″) wide.

Florist's stem wire.

Ironing board and iron.

Florist's binding tape.

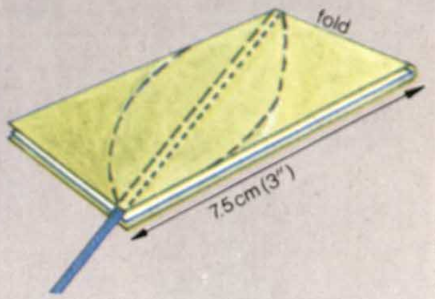


☐ Place the velvet ribbon on the ironing board, right side down. Place the hem tape on half the length of the ribbon.

☐ Position the stem wire diagonally across the hem tape, with one end meeting the corner of the tape at the centre of the length of ribbon.

☐ Fold the other half of the ribbon over the hem tape and wire, and press all the layers together with a warm iron so that the wire and hem tape are sandwiched between the two layers of velvet (fig.7).

☐ Using the leaf pattern on this page, draw shape on the velvet, making the tip of the leaf correspond with the tip of the wire (see fig.7).



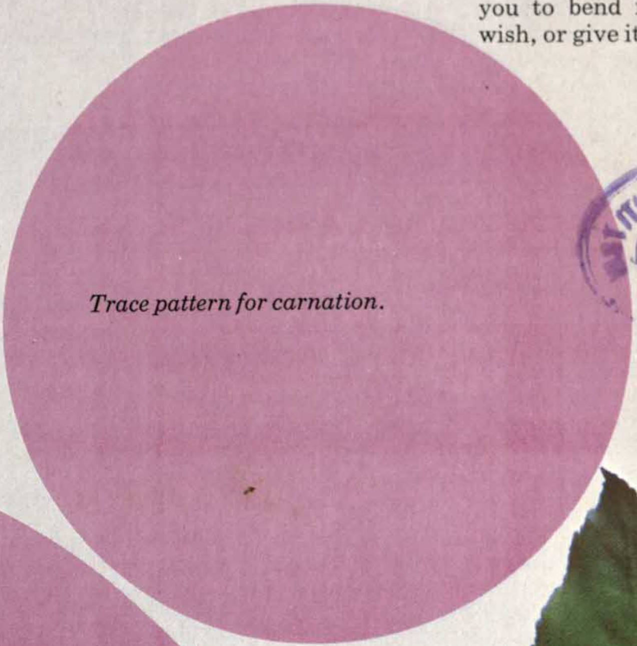
Coral Mula

7. *Wire is sandwiched between velvet.*

☐ Cut out the leaf shape.

☐ Bind the stem wire with florist's binding tape.

☐ The stem wire sandwiched between the two layers of velvet is equivalent to the central vein of a leaf. It gives body to the artificial leaf and enables you to bend it in any direction you wish, or give it extra shape.



Trace pattern for carnation.

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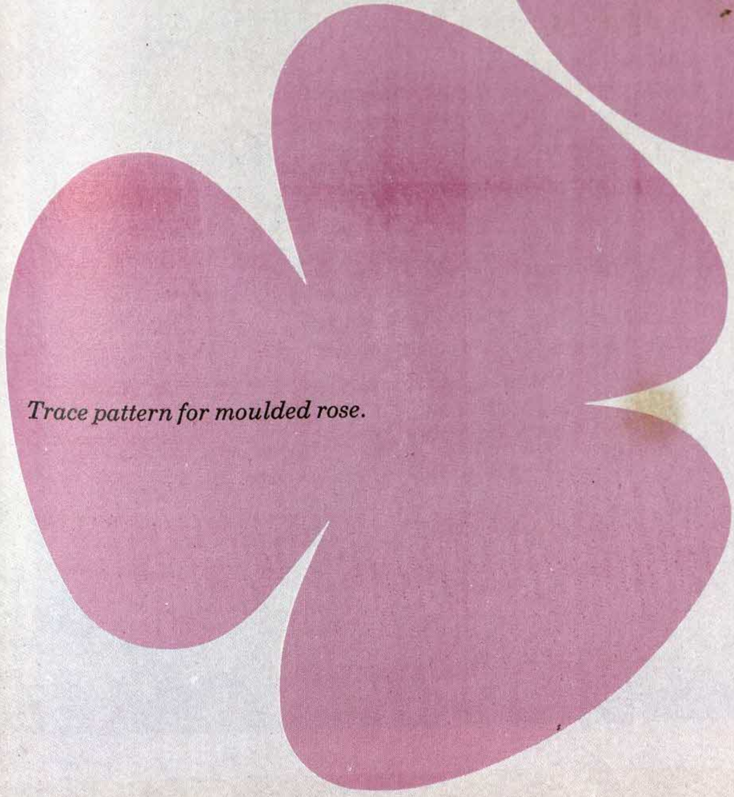


Trace pattern for moulded rose.

Paul Kemp

Intaglio prints: etching

Etching is one of the oldest techniques of intaglio printing. It is based on the principle that a line image etched into a smooth metal plate will hold a heavy ink and, under pressure, will yield a reverse image on paper placed in contact with this inked surface.

The precise origins of etching are unknown, but the process is thought to have been developed in the 15th century as a means of decorating metal armour. The earliest known print made from an etching is by a 16th century German artist, Daniel Hopfer. By the 17th century, etching had reached its zenith of perfection under artists such as Rembrandt.

Etchings are commonly confused with engravings (Printing chapter 21, page 2306). The difference lies in the method used to cut the design. Etching makes use of an acid solution (known as a mordant) to 'eat' away certain areas of the metal plate. These plates can be made from either zinc or copper, but zinc is cheaper. Using acid to incise the design enables you to produce much finer lines than would be possible with engravings, where cutting tools are used.

The etching process

The surface of the metal plate is first covered with an etching ground—a special wax substance which is acid-resistant. Etching grounds are available in solid form (referred to as 'hard' or 'soft') or liquid. The ground is then blackened with smoke and the design drawn on to the plate with a sharp metal tool. The lines of the design cut through the ground, exposing the metal beneath. The plate is then submerged in a container of acid known as the acid bath. The acid eats into the exposed metal, creating the design.

The etched plate is removed from the acid bath and the ground cleaned off. It is then covered with ink and the surface wiped so that the ink remains only in the etched crevices. Dampened paper is placed on the plate which is then forced through a press. The paper picks up the ink from the etched cavities to produce a print.

As with most crafts, do not be too ambitious in your first attempts. Choose simple designs and experiment with different types of lines in order to familiarize yourself with the medium.

You will need:

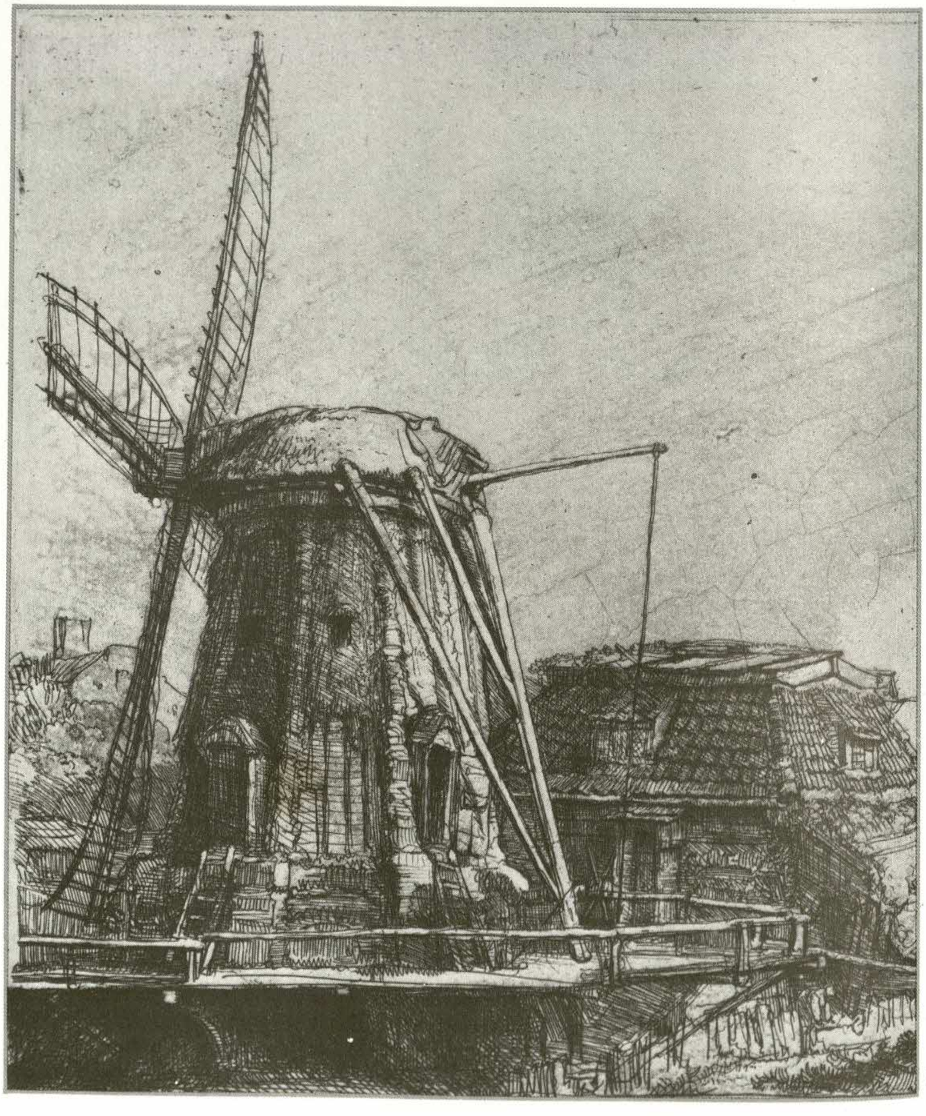
Tools

A press (see Printing chapter 21).
A small electric or gas hot-plate and metal hot plate cover.
Hard leather rollers are used for the ground.
Pressing board—two pieces of block-board and some weights will do.
Dabber or dolly to ink the plate.
Coarse and fine metal files.
Etching pens available at most craft shops. Alternatively you can use any sharp pointed metal instrument.
Two metal clamps.

Materials

An acid bath—a plastic or porcelain photographic bath is ideal, or any glass container at least 10cm (4″) deep with a flat bottom and large enough to take the metal plate.
A piece of hardboard large enough to cover the acid bath.
Polishing cloths or muslin.
Wax tapers, white spirit, cleaning cloths, cotton wool and palette knives.
Asbestos mat and rubber gloves.
Light coloured wax crayon or Conté crayon—optional.
A zinc plate, 1.6mm (gauge 14-16) thick. The plate must not be wider than the roller of the press or larger than two-thirds the length of the press.
One ball of hard etching ground.
Etching ink and printing paper.
Mordant—dilute solution of one part nitric acid to ten parts water.
Tissue and blotting paper.
Household ammonia and french chalk

Below: a detail of 'The Windmill', taken from one of the many landscape etchings by Rembrandt.



©The British Museum

A print from an etched plate showing the detail produced by the etching process. Designer: H. Andrew Freeth.

Paul Kemp

—ammonia is available at supermarkets and French chalk from most chemists.

Metal polish.

Stop-out varnish—an acid resistant solution used mainly to coat the back and edges of the metal plate.

Preparation of plate

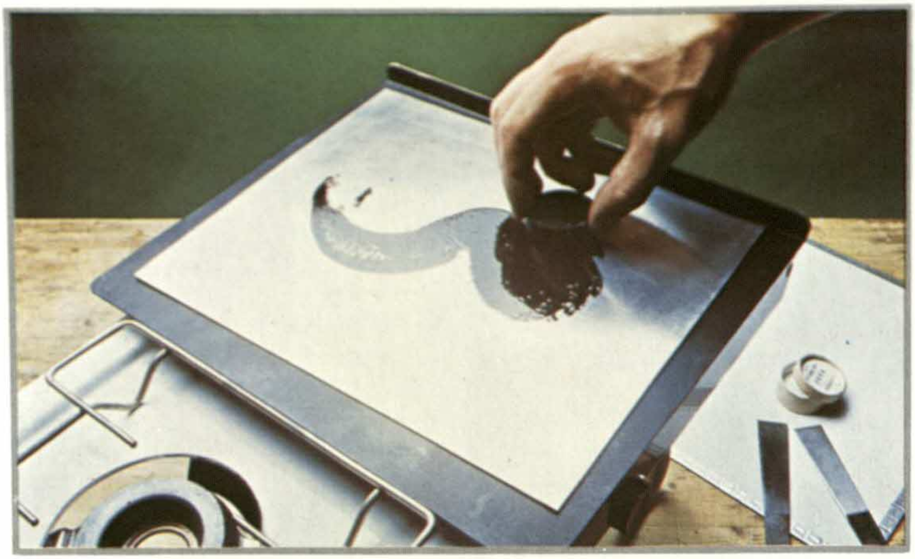
Buy the plate ready-cut to the required size—ie according to the size of the press.

☐ With a coarse metal file, bevel—ie put a slope on—the top edges of the plate. Smooth with a fine file and make sure all the metal filings are brushed off the plate.

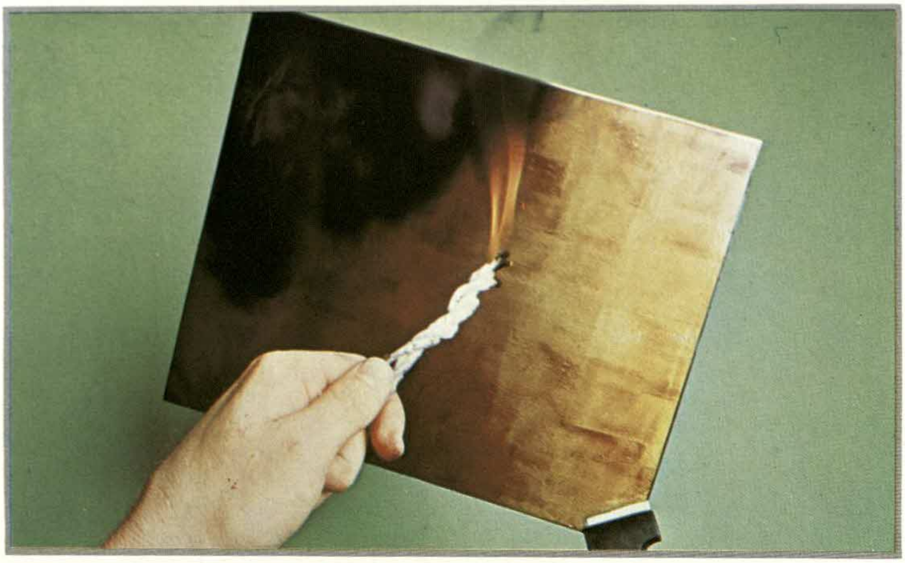
☐ Dip a piece of cotton wool into a paste of ammonia and French chalk and polish the surface of the plate which has the bevelled edges. The French chalk in the solution serves to polish the plate and the ammonia removes any grease. Clean the plate thoroughly.

To test whether the plate is ready for etching, place it under running water. If the polished surface holds water it is ready; if it resists the water it is still greasy. Drain off excess water.

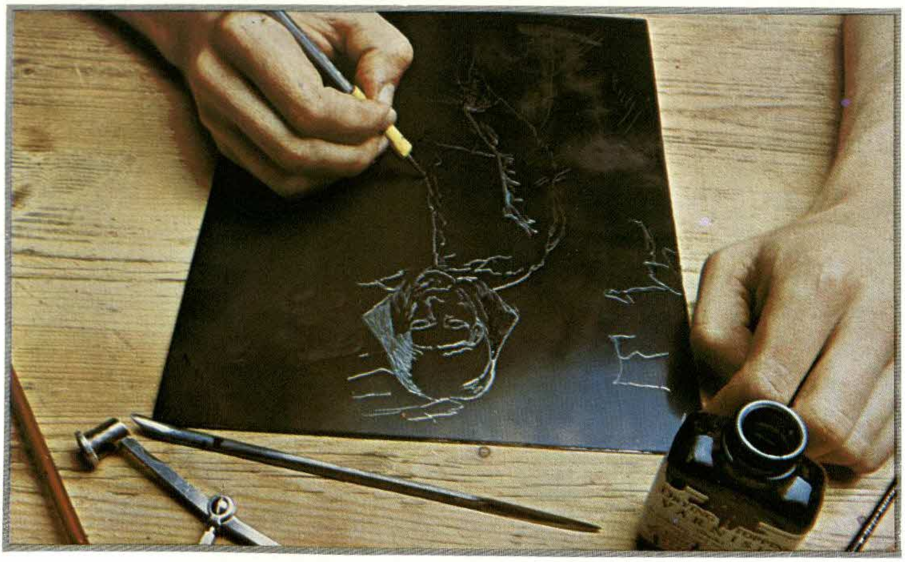
Applying the ground. Heat the metal hot-plate cover over a low burning gas or electric hot plate. When it is warm, place the clean zinc plate, polished face up, on the metal cover. Allow the etching plate to dry.



1. *Rub the ball of hard ground on to the warm plate.*



2. *Hold the plate in a clamp and smoke the ground surface with lighted tapers.*



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3. *Draw the picture with a sharp tool, exposing the metal beneath the ground.*

☐ Using a circular motion rub the ball of hard ground on to the etching plate. As the plate is warm, the ground will melt on contact with the plate (fig.1). With a hard roller, roll the ground so that it covers the surface evenly.

☐ Remove the etching plate from the hot plate by placing palette knives under the plate and easing it off on to an asbestos mat. Be careful not to damage the layer of ground.

Smoking the plate. This process adds a layer of soot to the hard ground and makes the drawing show up more clearly. It also hardens the ground and shows up any flaws in the layer of ground.

Note: soft ground does not have to be smoked. However, when starting etching, it is best to use hard ground as it is easier to work with.

☐ Place one corner of the plate in a metal clamp.

☐ Twist two or three wax tapers together and light.

☐ Holding the clamp and plate in one hand and the burning tapers in the other, smoke the ground. Make sure the burning tapers do not touch the ground (fig.2).

☐ When an even black coating is attained, let plate cool and release clamp.

☐ Touch up the corner of the plate marked by the clamp with the stop-out varnish.

The design. When the varnish is dry, trace the designs, or draw freehand, on to the smoked surface of the plate.

☐ If tracing a design, a light coloured wax crayon or Conté crayon rubbed on the back of the tracing paper can be used for transferring the design on to the plate. Do not put a lot of pressure on the plate when tracing as the ground is fragile.

☐ Draw into the ground along the lines of the design with a sharp etching tool. Pressure is not necessary as long as the ground is pierced and you can see the exposed metal (fig.3).

☐ When the drawing is complete, touch up any unwanted spots or exposed areas with stop-out varnish. The back of the plate and the edges should also be covered with the stop-out varnish.

Note: any exposed metal will be corroded by the acid, so check that only those parts of the design you want etched are exposed.

Etching the plate

While the varnish is drying prepare the mordant. This step must be done with great care: acid is corrosive and the fumes are dangerous.

Mix the mordant outside or in a well ventilated room—eg in front of an open window. Always work with rubber gloves for safety.

☐ Using a suitable container, measure into it 10 parts of water. To this add one part of nitric acid. The mordant should be deep enough to cover the plate.

Note: always add acid to water and never the reverse.

Should any of the mordant splash on to you, rinse thoroughly in running water.

☐ When the stop-out varnish is dry, slide the plate carefully into the acid bath and leave (fig.4).

The action of the acid on the exposed metal will create fumes, so do not stand over the acid bath.

☐ To check how far the corrosive action of the acid has gone, remove the plate from the bath, using rubber gloves.

☐ Hold the plate under running water to rinse clear of acid and examine.

☐ Certain areas might need retouching with the stop-out varnish where the acid has broken through the ground.

☐ Slide the plate back into the bath if you want the lines etched deeper. The longer the plate remains in the acid the deeper the lines will be etched.

☐ When the lines are etched to your satisfaction, remove plate from mordant, rinse and dry. Cover the acid bath with the piece of hardboard.

☐ Clean the ground from the plate with white spirit and polish plate with clean cloth and metal polish.

Inking the plate

You will now be able to see clearly the image etched into the plate. Before inking, prepare the paper as described below.

☐ Place the etched plate back on the hot plate cover. With a dabber or dolly, ink the metal plate following the technique described in Printing chapter 21.

☐ Wipe the inked surface of the plate so that it is clean and shiny but leaving the etched lines full of ink (fig.5). Wipe bevel edges clean.

Printing

All printing paper must be dampened before printing. Immerse the paper in a basin of fresh water for a few minutes, remove and allow to drain.

After the excess water has run off, place the paper between two sheets of blotting paper and press between blockboard until you are ready to use it.

☐ Place a piece of white tissue paper on the bed of the press and lay the inked plate on the tissues, inked side up.

☐ Take a piece of the damp printing paper and check to see that there is no excess water clinging to the surface. If there is, blot with blotting paper.

☐ Take the paper, holding it at diagonal corners, and place it carefully on top of the inked plate.

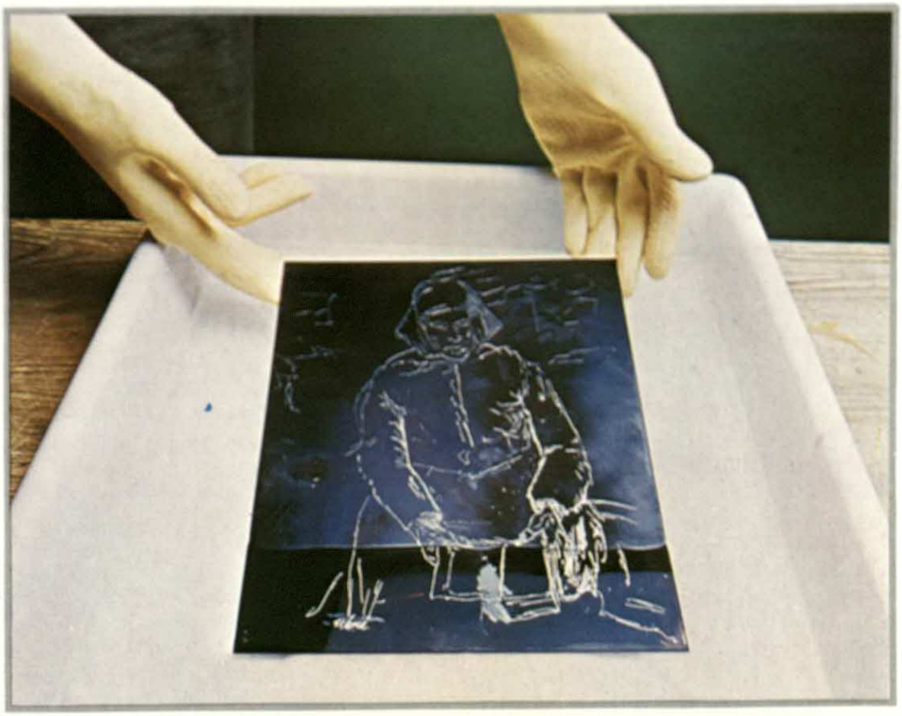
☐ Lay the felt blankets on top and, making sure that the pressure is sufficient, roll it through the press.

☐ Remove the blankets.

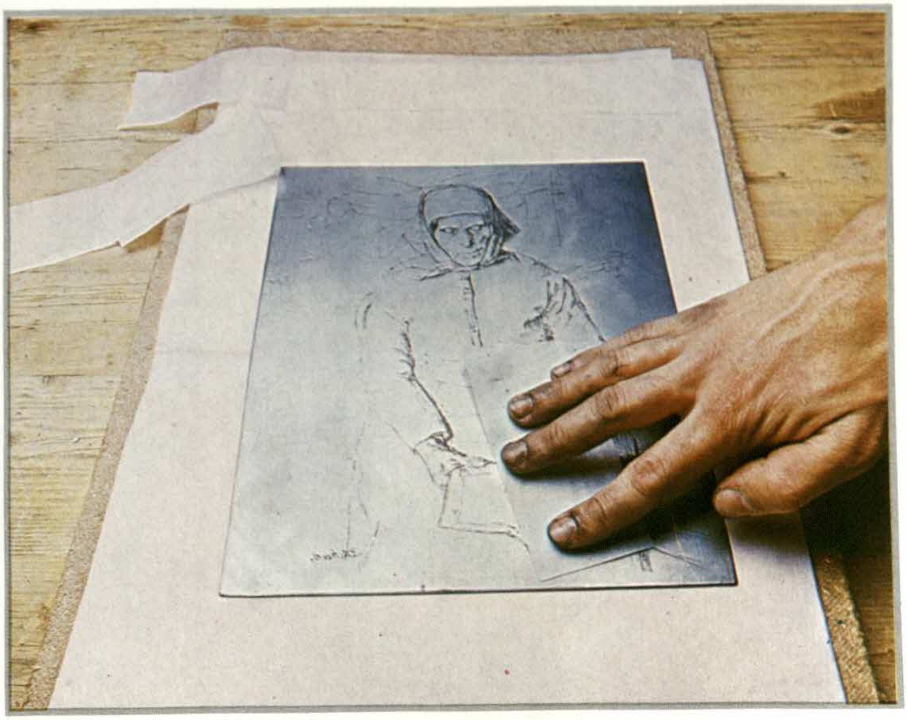
☐ Carefully remove the finished print from the plate, place between tissue paper, and then between two pieces of blockboard with weights on top. This prevents the print from curling up as it dries.

The print will take about 24 hours to dry. It can then be mounted and framed. The plate can be re-inked and more prints taken. Should you want to change the colour, clean the plate thoroughly with white spirit first.

It is important to clean up after printing. Wipe ink smudges from the press with a rag soaked in white spirit. Clean all tools thoroughly after use.



4. *Once the picture is completed, the plate is immersed in an acid bath.*



5. *Wipe the surface and edges lightly with tissue paper to remove excess ink.*

Combining beads and crochet

Choker, necklace, armband and bracelets made using the bead crochet technique with different coloured glass beads.

Crochet and beadwork can be combined to make necklaces, chokers, bracelets, armbands etc. Beads of different colours and sizes can be used to create various patterns and styles.

You will need:

Beading needle.

Crochet hook size 3.

Cotton cord such as J & P Coats Knit-Cro-Sheen to match the predominant colour of the beads.

Glass, wooden or ceramic beads of your choice. For the bead crochet shown in the photograph (right) glass beads of about 3mm ($\frac{1}{8}''$) diameter were used. For a necklace you will need about 2000 beads, for a bracelet about 350, for an armband about 500 and for a choker about 700.

First of all the beads are threaded on to the cotton cord. Enough beads must be threaded for the whole project and it is better to over-estimate the amount you will need as more cannot easily be added later.

If you want to create the spiral effect on the necklace and bracelet in the photograph, thread a variety of differently coloured beads in a repeat pattern. For the necklace the repeat pattern is yellow, orange, red, maroon, brown, royal blue, green, and light blue—eight colours altogether. Leave plenty of space between the beads to allow for the crochet. Rewind the cord on to the reel as you thread the beads to avoid tangles.

When all the beads have been threaded, the cord is then crocheted into a long tubular rope and one bead caught up in each stitch.

Crochet pattern

The crochet starts with a chain which is joined up at the ends with a slip-stitch to form a circle.

The number of chains in the circle will determine whether the spiral of colours will be tight or loose. To start with, try the repeat pattern of eight colours used for the necklace and make eight chains.

The first row. Slip-stitch round the chain without including any beads.

The second row. Slide a bead up to the crochet and slip-stitch into the first slip-stitch on the previous row, thereby securing the bead on the outside of the circle.

Repeat all round the row.

The third row. This is worked in the same way as the second row—securing one bead with each slip-stitch. The crochet hook should be put through the cord on the right-hand side of the bead on the previous row.

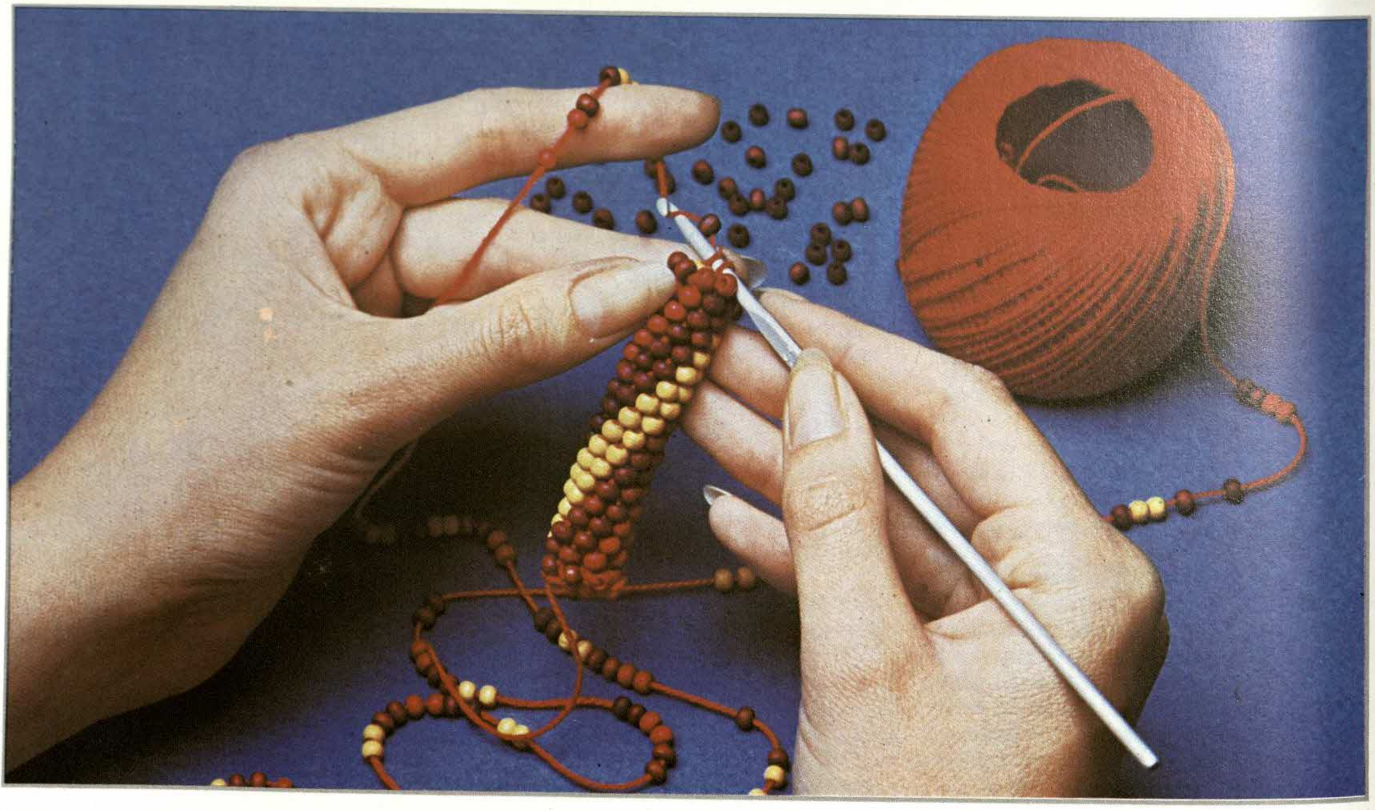
You will find that each colour falls automatically to one side of the same colour on the previous row thereby creating the spiral effect.

Successive rows. These are worked in exactly the same way as the third row. Experiment increasing and decreasing the number of stitches in each row to tighten or loosen the spiral of colours. This will not affect the diameter of the rope which is about 1.3cm ($\frac{1}{2}''$).

Finishing off. When you come to the end of the beads, or when the rope is long enough, work one row without beads and finish off in the usual way.

For a long necklace which does not need a clasp, stitch the ends together matching the spiral of colours.

For a choker or bracelet which will need a clasp, sew a large round button on one end, and make a loop of beads on the other end.



One bead is caught up in each stitch.

Geoffrey Frosh

Transworld

Jacobean crewel work

Yarn — embroidery 21

The lively designs of Jacobean crewel embroidery are fun to work. The motifs on these curtains were designed by Joan Cotton.

Jacobean crewel work is a lively style of pictorial embroidery which became popular in Britain in the 17th century. The inspiration for Jacobean work owes much to Eastern culture and the hangings, wallpapers and exotic fruits brought to Europe in the 16th and 17th centuries from India and later from China. This vivid eastern influence, combined with the delicate traceries and floral motifs of Tudor embroidery, produced designs of an enchanting if bewildering mixture of Christian, historical and oriental symbolism.

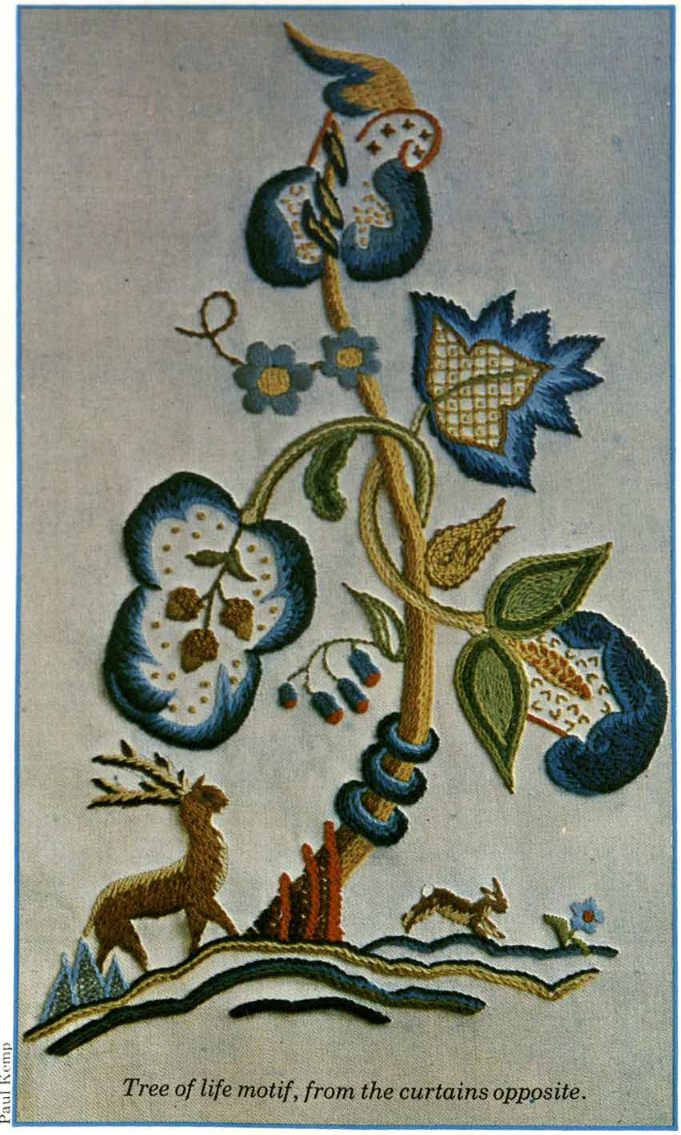
Typical Jacobean embroidery designs show a variety of colourful and stylized plants, animals and birds. These often 'grow' on one tree—the symbolic tree of life—which springs from a series of hillocks, known as *terra firma*.

The leaves and blossoms of the tree of life are heavy and out of proportion to each other, with thick and boldly embroidered stems. As a contrast some of the motifs are simply outlined and filled with openwork stitchery.

The animals, birds and plants are a mixture of the familiar and the exotic, and many have symbolic meanings. The acorn, for example, was associated with Charles II who hid in an oak tree in his flight through England in 1651. The English rose was a national emblem and the carnation was a symbol of the Stuart family. The lamb, the stag and the serpent all have religious connotations.

Colours on old pieces of Jacobean work were predominantly greens with blues, browns, yellows and some soft, dull reds. Green in several shades was used for the terra firma and brown for animals. Birds and flowers could be a combination of several colours with no regard to the true colours of nature.

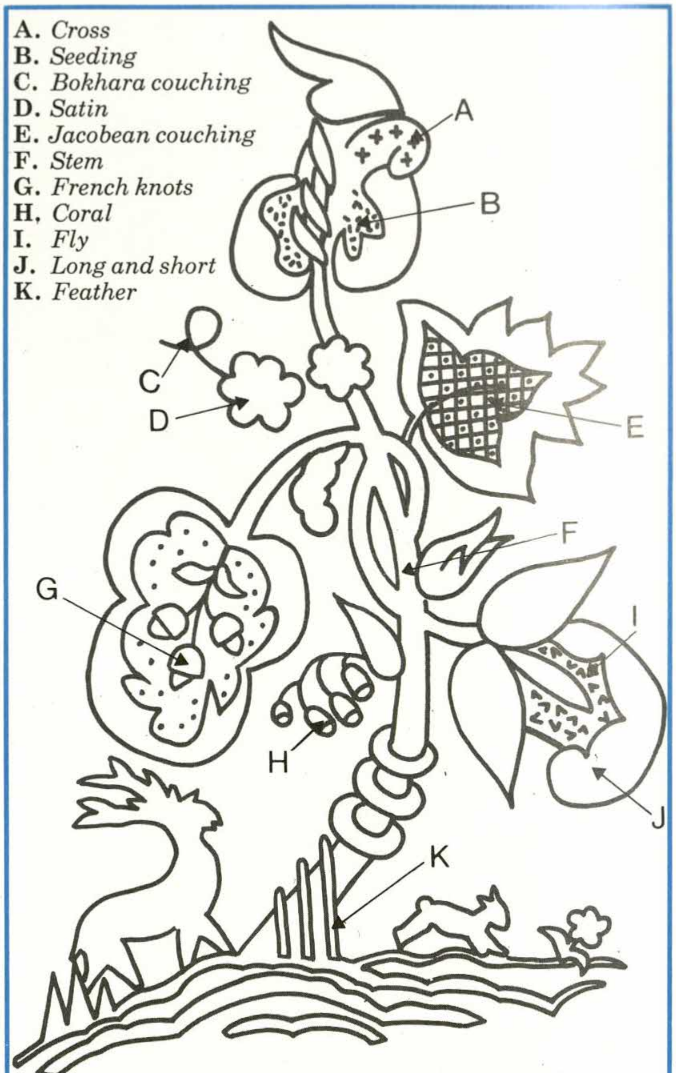
You can copy the traditional motifs shown here and on page 2241 by tracing the outlines and then enlarging them in scale to the desired size.



Tree of life motif, from the curtains opposite.

Paul Kemp

A. *Cross*
B. *Seeding*
C. *Bokhara couching*
D. *Satin*
E. *Jacobean couching*
F. *Stem*
G. *French knots*
H, *Coral*
I. *Fly*
J. *Long and short*
K. *Feather*

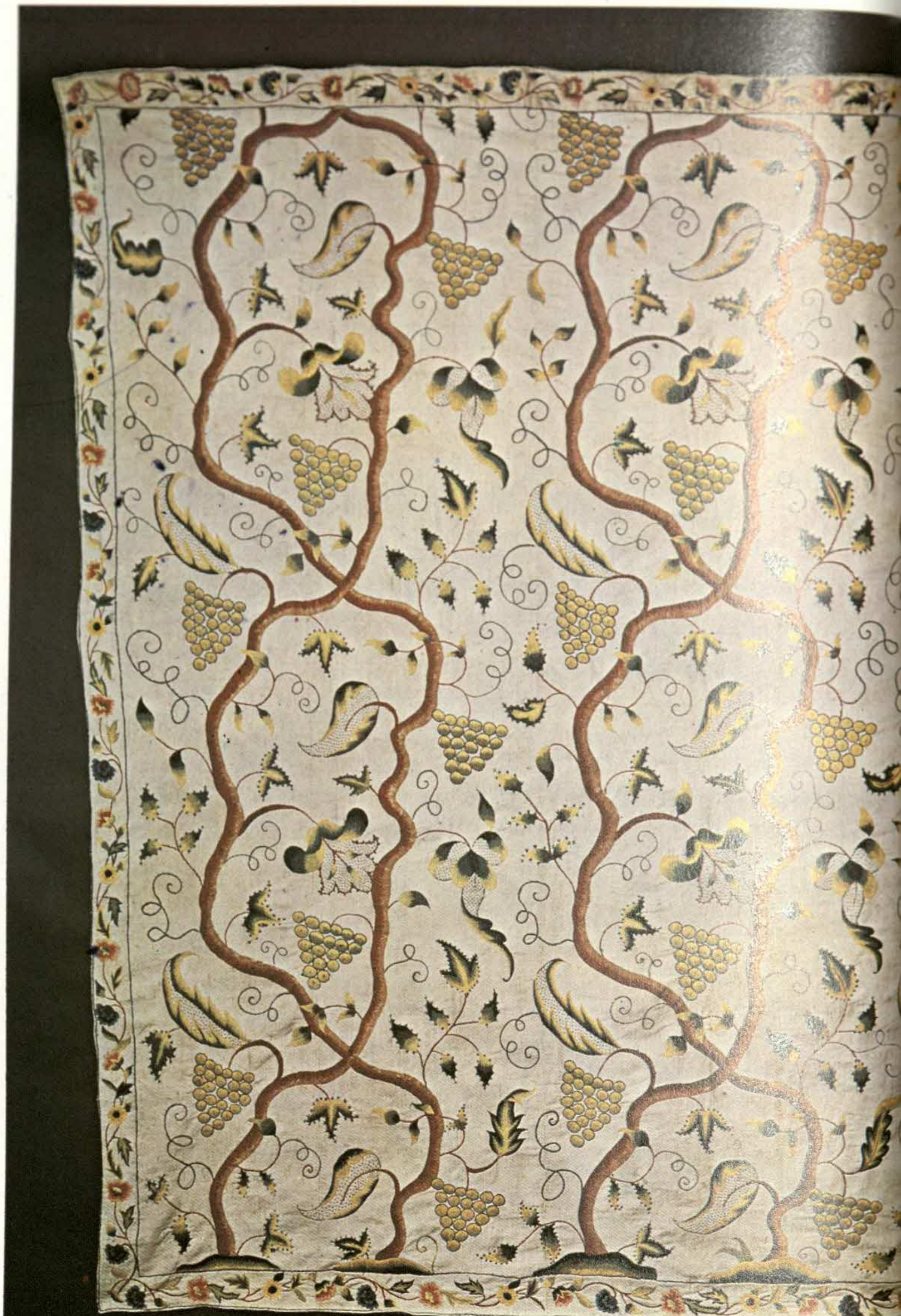


Stitches used in tree of life motif.

Trevor Lawrence

The American Museum in Britain, Bath

Some of the delicate motifs from an 18th century American bed-hanging.



Grapes are an unusual motif on this early 18th century bed-hanging.

Uses

Jacobean embroidery was originally used to decorate large items like wall- and bed-hangings where the heavy background fabric was needed. But it can successfully be worked on curtains and covers for beds, chairs and cushions. If you use a lighter weight fabric than twilled linen for the background, you could also make table linen and dress accessories.

Stitches

There are no rules about the stitches used for Jacobean work—it is a matter of personal choice. It is possible to work entirely in one stitch—such as chain stitch—throughout although the work is more interesting to do if several stitches are used. A leaf, for example, might be outlined with long and short stitch and have the centre filled with couching. A flower might have a couched outline with some petals filled with solid satin stitch and others with lines of stem stitch. An acorn could be

Paul Kemp

filled with closely worked French knots.
Starting stitching. Use lengths of yarn of approximately 50cm (20″) long. To start stitching, do not use a knot but bring the needle through the right side of the fabric on a line of the design. Work a couple of back stitches which will later be covered by the embroidery.
Finishing lengths. Turn the fabric to the wrong side and carefully weave the needle in and out of the backs of stitches so that the yarn does not show on the right side.

Basic stitches

Many of the stitches used in Jacobean work have been described in earlier Embroidery chapters. Some new stitches are described below.

Cretan stitch

☐ To fill a shape like that in fig.1a, bring through the needle at point X. Take a small stitch on the upper line with the needle pointing inwards and over the thread.
☐ Repeat, taking a small stitch on the lower line (fig.1b).
☐ Continue working stitches alternately on the upper and lower lines in this way (fig.1c).

Fly stitch

☐ Bring through the needle and hold down the yarn with your thumb.
☐ Insert the needle to the right on the same level and take a small stitch downwards to the centre with the thread below the needle (fig. 2a). Pull through and insert the needle below the stitch at the centre to complete it.
Fig.2b shows completed stitches and how to begin subsequent ones.

Fern stitch

This stitch consists of three straight stitches of equal length radiating from the same point (fig.3).

Seeding

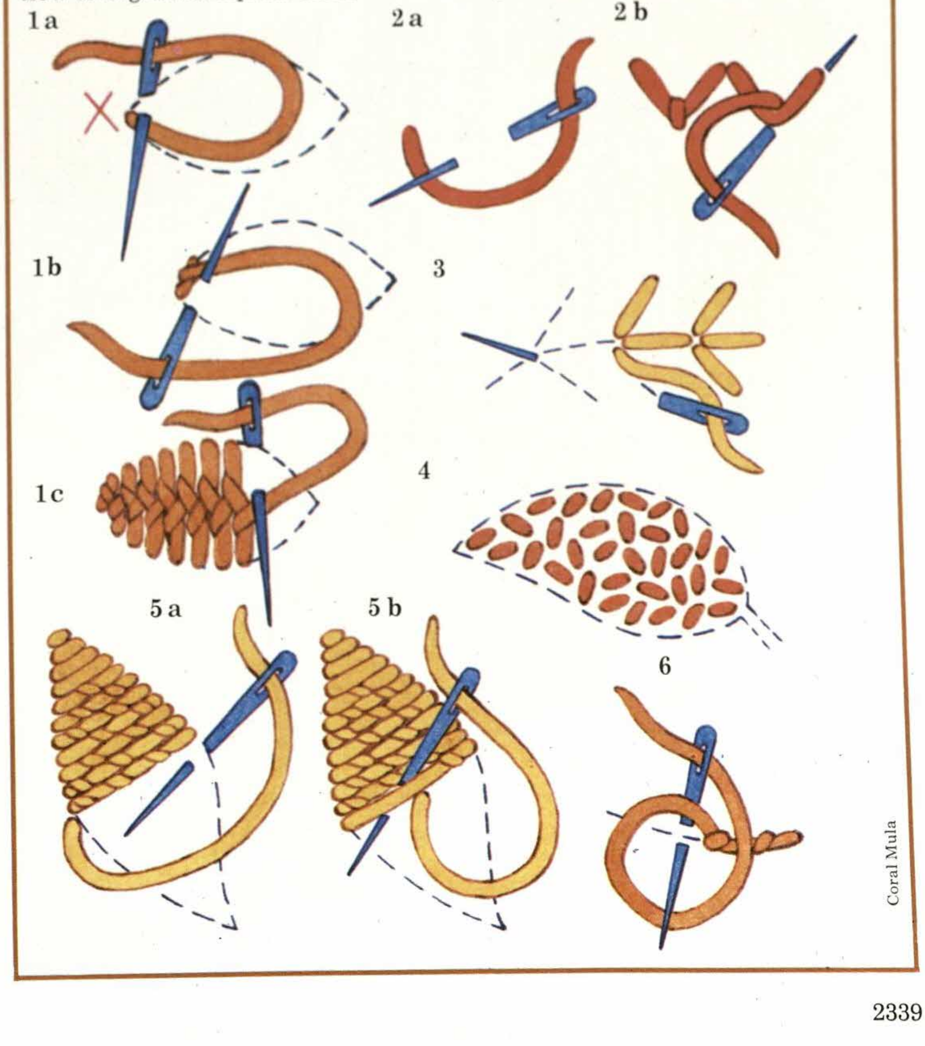
This simple stitch is made up from small straight stitches of equal length worked at random within the shape (fig.4).

Bokhara couching

For this filling stitch the thread is laid across the stitch from left to right (fig.5a) and tied down with small slanting stitches at regular intervals on the return journey (fig.5b). The tying stitches should be pulled tight, leaving the laid thread slightly loose between.

Coral stitch

☐ Bring the thread out at the right-hand end of the line to be worked, lay the thread along the line and hold down with the left thumb.
☐ Take a small stitch under the line and thread as shown in fig.6 and pull through, bringing the needle over the lower thread. Continue like this, working stitches at regular intervals.



Coral Mula

Roger Charity

Paul Kemp

The materials

The traditional materials help give Jacobean work its informal homely character. Use crewel wool for the stitchery unless a tapestry wool is required for a heavier effect.

Colours. Choose colours which are close to the old vegetable dyes of the Jacobean period. These hues blend exceptionally well and they give the work a pleasing softness.

Fabric. Jacobean colours look best on natural-coloured background and a particularly suitable fabric is twilled linen. This is close woven and firm enough to take large areas of heavy stitchery. Good quality linen or linen crash can be used and unbleached calico is also suitable, although care must be taken to avoid puckering.

Needles. Use crewel needles with an eye large enough for the wool to be threaded easily—a No.7 size is suitable for a single strand of crewel wool.

Frame. It is essential to use a frame of a suitable size for the major part of the embroidery, eg the couched open fillings and areas of long and short stitch. The fabric may be removed from the frame for stitches such as stem, chain and coral because these are awkward to work in à frame.

Left: a gay, modern Jacobean crewel design, worked entirely in chain stitch.

Blocking

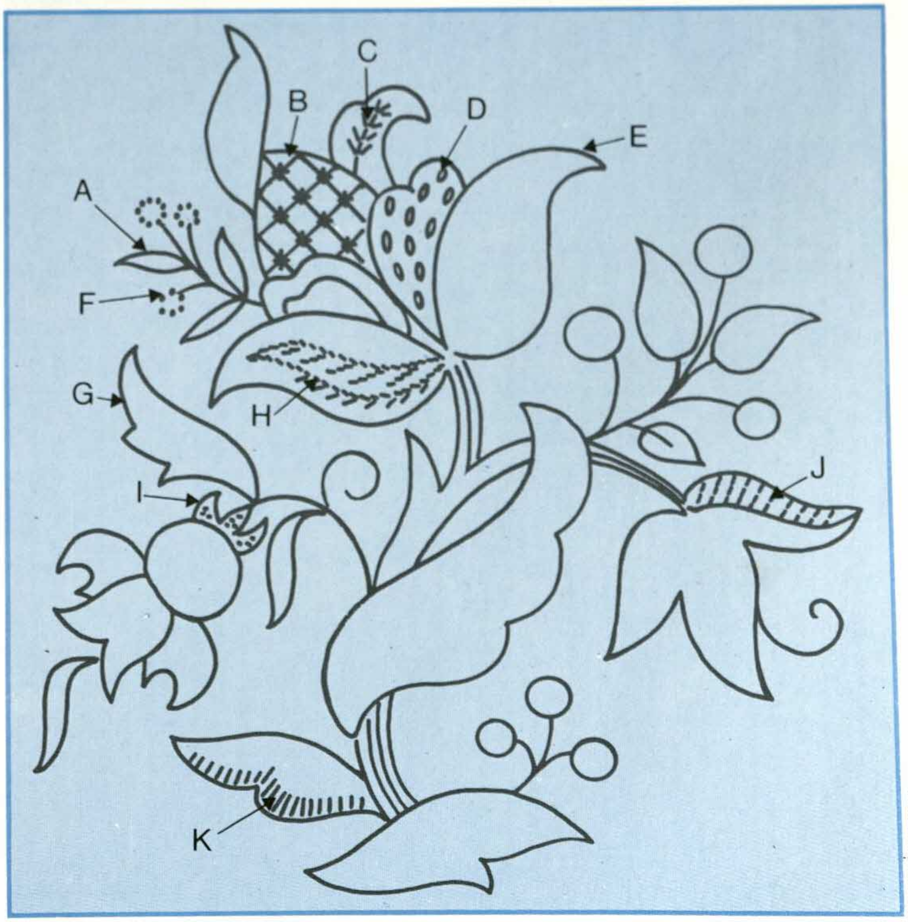
When the embroidery is finished, the fabric should be blocked to smooth it out and restore its shape. To do this, place a clean cloth on a piece of wood larger than the item to be blocked. Place the embroidery face down on it.

☐ Using tacks which will not rust, tack the top edge to the wood from left to right, pulling the edge taut. Tack the left-hand edge in the same way, then the bottom edge and then the right-hand edge. The fabric must be stretched tight enough to ensure that there are no wrinkles in it.

☐ Thoroughly wet the fabric by soaking it with water from a squeezed sponge. Mop up excess water with a towel and leave the fabric to dry.

Traditional Jacobean crewel design by Coats in typically soft colours and a variety of stitches which are shown in the diagram below.

A. *Satin*
B. *Jacobean couching*
C. *Fern*
D. *Daisy*
E. *Chain*
F. *French knots*
G. *Stem*
H. *Straight*
I. *Seeding*
J. *Back*
K. *Blanket*



Trevor Lawrence

Traditional corn dollies

Basketry 21

Previous chapters contain information on how to cut, dry, store and dampen wheat straw and how to weave with paper straws (see Basketry chapters 19 and 20, pages 2234 and 2264 respectively). Having mastered these techniques, it is now possible to progress to making some of the traditional golden corn dollies that look so delightful hanging in a kitchen or serving as unusual table decorations. Another interesting use for them is to revive the old custom of making a baby rattle out of straw, enclosing inside either a small bell or a few beans to make an intriguing noise.

The materials for corn dolly making are simple enough: hollow-centred straw, such as wheat, oat, rye or maize; raffia, a sharp pair of scissors, wire and ribbon.

The ribbons used to adorn traditional corn dollies have different meanings. Red stands for the poppy and for warmth, green for Spring and fertility, blue for the cornflower and Truth, yellow for the corn and the goddess Ceres, white for Purity and brown for the earth.

Remember to dampen the straw before working with it (see Basketry chapter 19, page 2234).

Rupert Watts

Traditional corn dollies—Welsh fan, Hereford lantern and Suffolk horseshoe. Designed by Carolyn Tidmarsh.

Five straw favour

These were often made by farm hands as love tokens for their sweethearts.

☐ Take five straws with the ears still in place and, with raffia, tie them together firmly just below the ears.

☐ Spread out the straws and work a five straw weave (see Basketry chapter 20, page 2264) without a former and with the ears dangling from the weave. Do not increase the size of the work: keep it constant along its length.

☐ Leave a short length of unwoven straw at the end.

☐ Tie the straws where the weaving ends with raffia.

☐ Bend the plait into a loop and tie together above the ears.

☐ Trim off excess straw and decorate with ribbon bow.

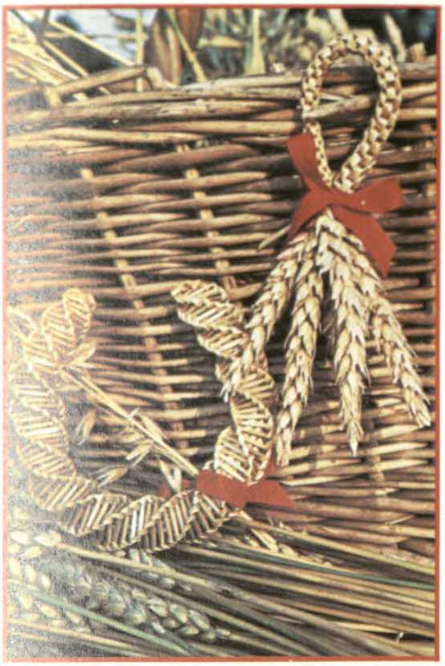
Suffolk horseshoe

The 'horseshoe' is another five straw plait, like the 'favour' and the 'lantern' (described next).

You will need a former to work round and about twenty-five to thirty straws.

☐ For the former take about six 15cm (6") long straws and a short length of wire. Bind the straws together with the wire.

☐ Tie five straws on to the end of the former with the straws pointing away from the former and spread the straws

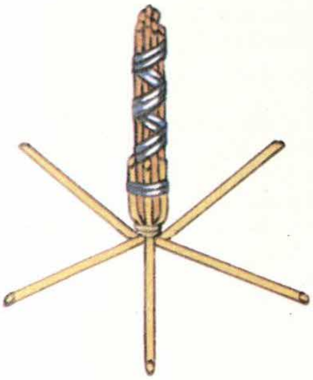


Rupert Watts

Horseshoe and five straw favour.

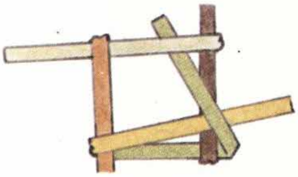
into a five-pointed star (fig.1).

☐ With the former pointing upwards, plait round the core using the decreasing plait all the time.



1. *Working around the former.*

☐ Close the end and finish off by tucking one straw under the opposite one (fig.2).



Coral Mula

2. *Straw tucked under to finish.*

☐ Trim straw ends close to the plait and bend into a horseshoe-shape.

☐ Trim with a spray of oats (as a compliment to the horse) and a ribbon. If you have some experience doing the five straw weave, you can bend the former into a horseshoe shape and then do the plaiting.

Yorkshire lantern

☐ Take five straws with the ears on them and about thirty without. Cut the ends at a slant to make joining easier.

☐ With raffia, tie five straws just below the ears.

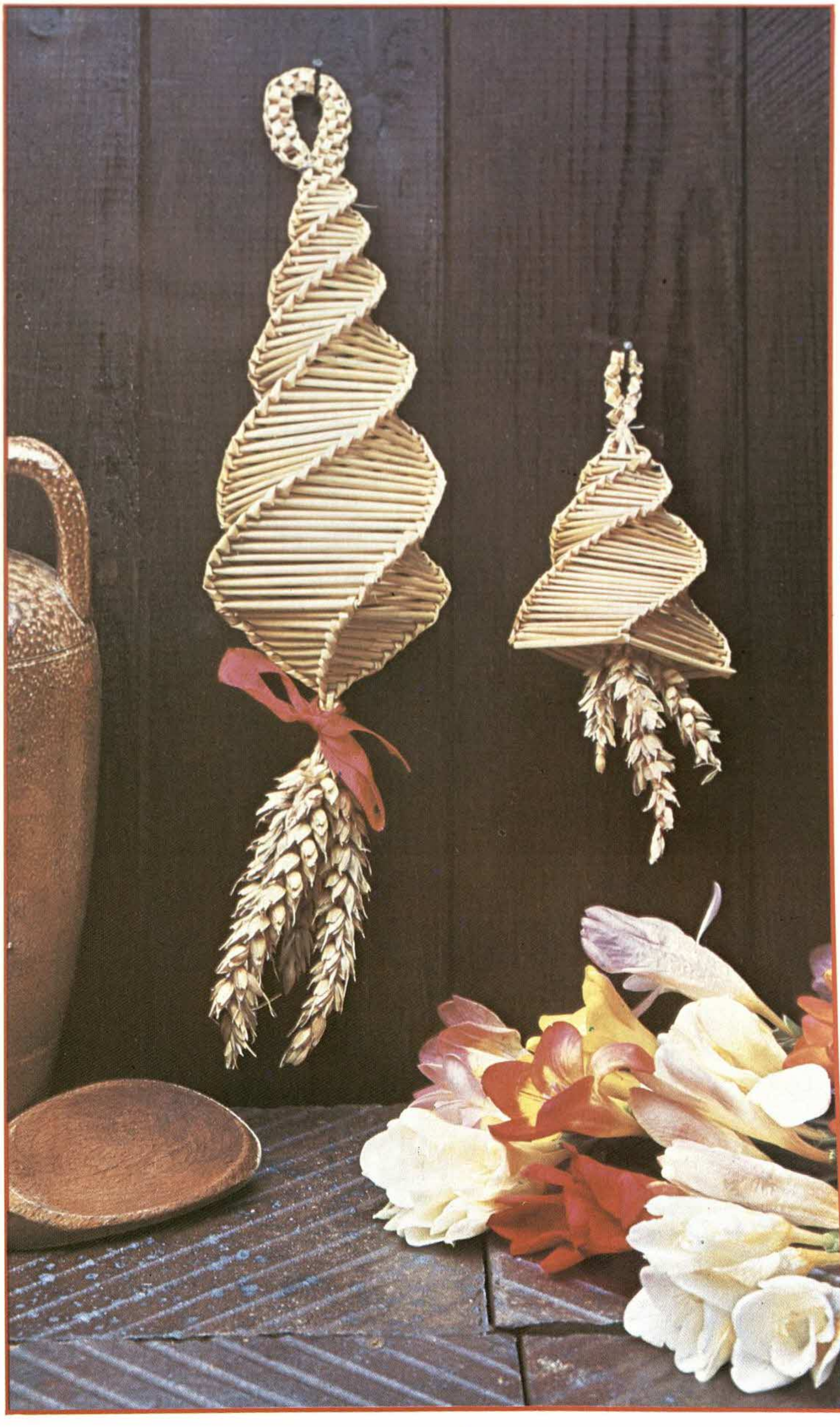
☐ Work a five straw weave and increase the size on every round. Join in new straws as required.

☐ When the base of the lantern is the required size, start decreasing gradually, working until the work comes to a point and closes at the top.

The spiral effect will appear as you decrease. When the work has closed, make sure that you have five long straws joined in.

☐ Continue plaiting and make a loop to finish and tie with raffia. The addition of a coloured ribbon of your choice is optional.

Two traditional corn dolly lanterns, from Yorkshire and Hereford.



Paul Kemp

Short Welsh fan

☐ Prepare twenty-nine well-matched straws, each with ears the same size and colour.

☐ Tie three firmly together just below the ears.

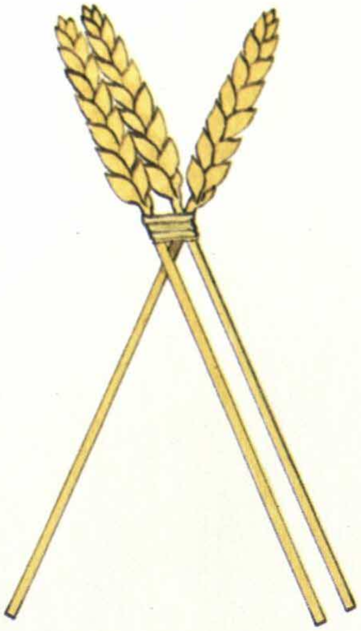
☐ Lay them flat on a table with the ears facing away from you (fig.3).

Ears of wheat have two sides to them, a rough and a smooth, so make sure the ears are all facing smooth side up.

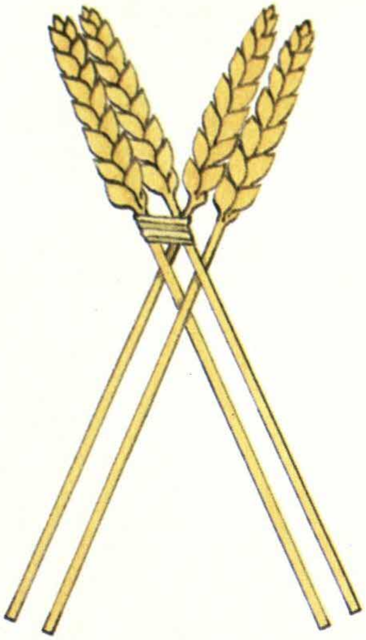
☐ Keeping the smooth side of the ear uppermost, take a straw and put it under the outside one of the pair so that it lies parallel to the single one (fig.4).

The straws added to the original three are not tied together but locked in position.

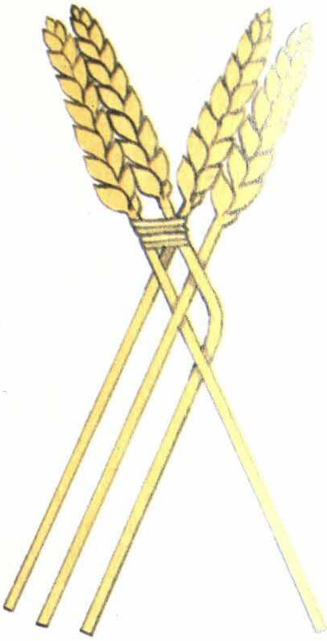
☐ Lift up the inside one of the two straws (the stem) and lock it in place by folding the outside straw under it and across to the left, then replace the inside straw (fig.5).



3. *Three straws tied together to start the Welsh fan.*



4. *Fourth straw positioned parallel to single straw.*



5. *Right-hand straw is folded under one and moved to the left.*

Coral Mula

You now have one straw on the right and three on the left.

☐ Insert another straw under the outside straw on the left-hand side (fig.6).

☐ Repeat the locking process (fig.7).

☐ Continue adding one straw on each side until you have thirteen in all.

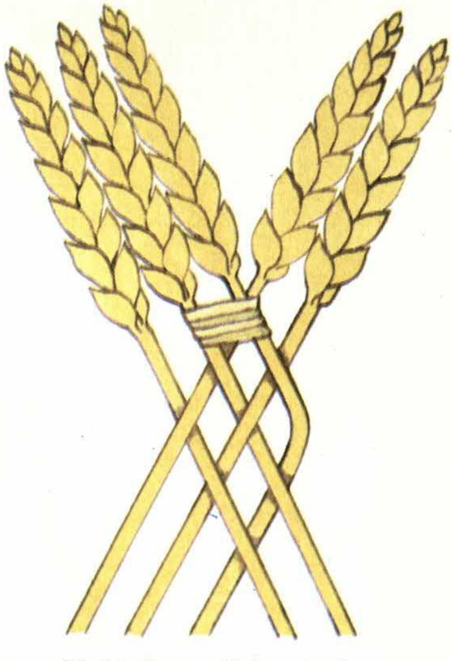
As the ears may now begin to crowd together, do an extra locking weave on each side after adding each pair of straws, to secure them.

☐ When all the straws have been used up, do five extra locking weaves alternately on each side.

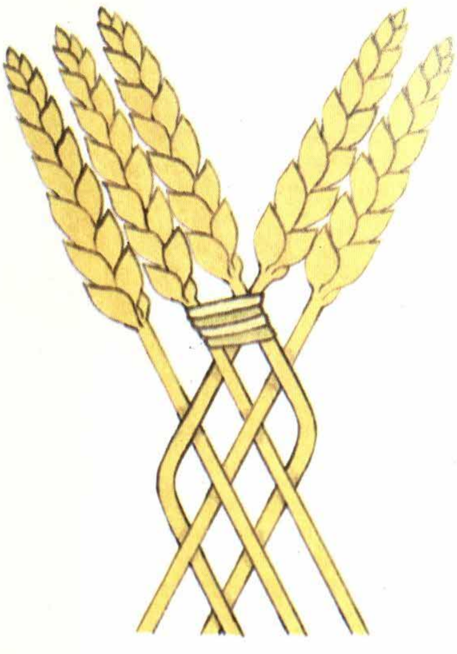
☐ Bunch the straws together at the ends, tie with raffia and cut off the surplus straw.

☐ Keep flat while drying.

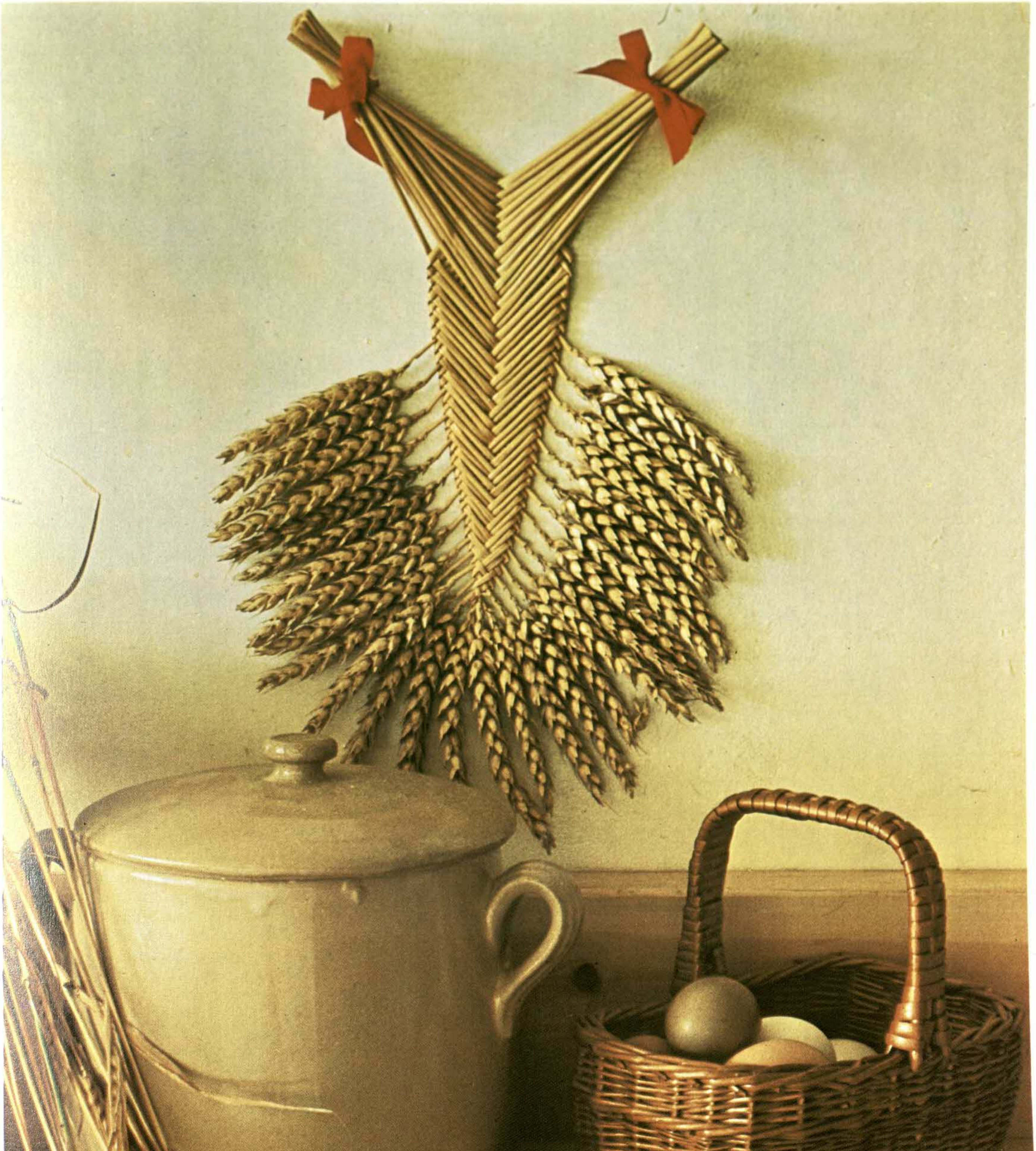
☐ To decorate, tie ribbons on to each bunch of straws.



6. *Straw added to lie parallel to single one.*



7. *The locking process is repeated on the left.*



The red ribbons on the Welsh fan stand for warmth.

Rupert Watts

Restoring leather

Any old or damaged leather object will present its particular problems to the restorer. The suitcase shown here is a good example—when found in a junk shop the handle was missing, the corners were split, some of the stitching had come undone, and the leather was very dry and in need of a good polish. In spite of all this it was apparent that the leather was of good quality, and the case was certainly worth restoring. Although a suitcase is used here to illustrate some of the repairs which are possible on leather, the same general techniques of re-stitching, refinishing and mending can be applied to other leather goods as well.

Corners

If the corners of a suitcase or bag are split and some of the leather worn away, the best way to restore these is to attach corner pieces which will last longer than simply re-stitching. Corner pieces are made using the moulding technique explained in Leather chapter 13, page 2274.

You will need:

Vegetable-tanned cow-hide 3mm ($\frac{1}{8}''$) thick. An 18cm (7″) square piece is enough to make four corners.
Sharp knife such as a Stanley knife.
A wooden former over which to mould the corners. This should be a block of pine with a square corner and with edges at least 7.5cm (3″) long.
A vice.
Two harness needles size 3.
Diamond stitching awl.
Hammer with large, smooth face.
Protractor or other object with a curved edge.
Soft pencil.
PVA adhesive such as Evo-stik.
Pair of dividers with adjustable screw.
No.6 pricking wheel.
Linen thread.
Beeswax.
Edge shave.
Leather dye and canvas rag.

☐ If there is a lining, ease it away from the leather so that the inside of each corner is accessible.

☐ Cut out circles of leather 7.5cm (3″) in diameter—one circle for each corner to be repaired.

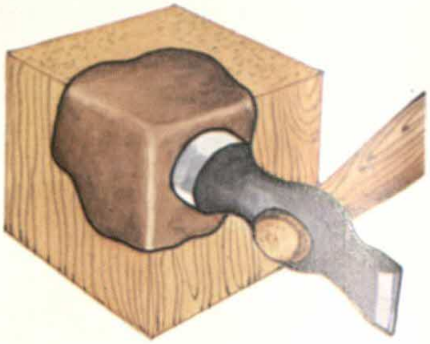
☐ Soak the circles in water for about 15 minutes, remove from the water and allow to drain.

☐ Fix the wooden former in a vice.

☐ Place the centre of one of the circles exactly over a corner on the former and stretch and press over the corner until the leather takes up this shape.

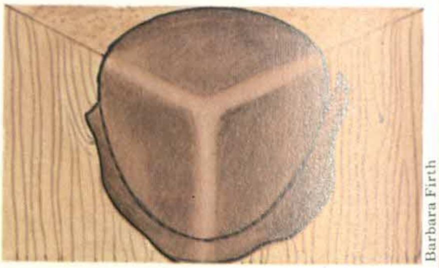
☐ Using the large-faced hammer, tap the sides of the leather flat (fig.1).

☐ Remove from the former and leave to dry. Check the shape of the corner piece when half dry to make sure it is correct. Repeat with other pieces.



1. *Tap the sides of the corner pieces flat with a hammer.*

☐ When the corner pieces are dry, trim the edges which will have been pulled out of shape during the moulding process (fig,2). To do this, find an object with a curved edge such as a protractor, place it over each edge in turn and draw round with a soft pencil.



Barbara Firth

2. *When dry, trim the uneven edges.*

☐ Cut along the pencil line.

☐ Hold the corner pieces in position over the corners and draw round to mark the area for gluing.

☐ Remove the corner pieces, apply glue to the marked area on the suitcase and the inside of the corner pieces.

☐ Making sure that the sides of the suitcase meet at the corners, place the corner pieces over the corners, press down and leave to dry.

☐ When dry, scribe a stitching line round the edges of the corner pieces, 3mm ($\frac{1}{8}''$) from the edge.

☐ Make stitch marks along the line with the pricking wheel.

☐ Using the stitching awl and two needles, stitch the corner pieces to the suitcase.

☐ Trim the sharp edges of the corner pieces with the edge shave.

☐ Dye corners to match the suitcase, (see Leather chapter 9, page 2118).

☐ Polish the edges with a canvas rag and water.

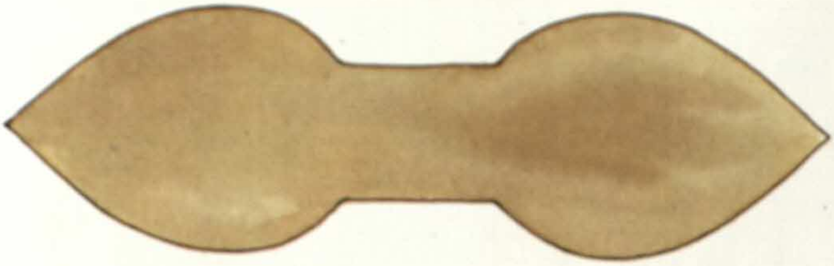
☐ Replace the lining.

The suitcase (shown right) as it was when found in a local junk shop.

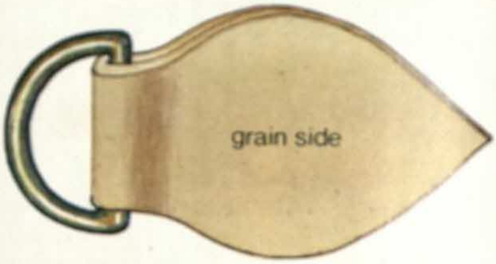
Sandra Lousada

Restored suitcase is transformed into a handsome piece of hand luggage. Restoration by John Williams.

Third World health: the role of the companies called into question
League against cruel sports
Eighth Annual Report & Meeting



3. *Basic shape for handle attachments—the size may vary.*



4. *Thread attachments through D-rings.*

Handles

The handle is often the first thing to go on a suitcase, briefcase or handbag and will need replacing.

Instructions are given here for a suitcase handle.

You will need:

Vegetable-tanned russet hide 3mm (⅛") thick. To estimate the length of leather needed for this type of handle, measure the distance between the old handle attachment, double this measurement and add on 2.5cm (1"). The width will be four times the desired width of the handle.

Two brass D-rings.

Sharp knife. Skiving knife.

Hack-saw for removing rivets.

Pricking wheel. Edge shave.

Stitching awl.

Two copper rivets (optional).

Two harness needles.

Dividers with adjustable screw.

Piece of rope 1.3cm (½") diameter, with length equal to twice the distance between the old handle attachments.

PVA adhesive such as Evo-stik.

Leather dye.

☐ Ease the lining (if there is one) away from the front of the suitcase so that the inside is accessible.

☐ First of all the old handle attachments must be removed. If they are stitched on, simply cut through the stitching with a sharp knife, making sure not to damage the leather of the case. (On the suitcase used here the handle attachments were riveted on and so were cut away from the rivet, leaving the shank of the rivet exposed. This was then sawn through with a hack-saw, and the two halves of the rivet removed.)

☐ Using the old handle attachments as a guide, make a template for the new attachments (fig.3).

☐ Cut out two new handle attachments.

☐ Thread each attachment through a brass D-ring.

☐ Apply glue to the flesh side of the handle attachments and fold each handle attachment in half, flesh sides together (fig.4). The handle may just need re-stitching, but here are instructions for making a new handle.

☐ The length of the handle should be slightly longer than the distance between the attachments. Although these have not yet been attached, the distance will be slightly less than that between the old handle attachments to avoid stitching through the same leather twice which weakens it.

☐ Cut a piece of cow-hide 2.5cm (1") wide and twice as long as the intended handle plus 2.5cm (1").

☐ Skive 2.5cm (1") at each end, one end on the grain side and one on the flesh side.

☐ Thread this piece of leather through the D-rings and glue the two skived ends together.

☐ Glue the inside of the leather loop and stick together.

☐ Damp the leather that folds round the D-rings and pinch together.

☐ Cut two lengths of rope just shorter than the length of the handle. Cut the ends to a point and stick to the outside of the loop, one on the upper face and one on the lower face (fig.5). These must be central on the strip of leather leaving room for the stitching along each side.

☐ Cut out another strap of cow-hide, 4cm (1½") wide, the same length as the other strap and skive as before.

☐ Apply adhesive to the flesh side of the strap and to the outside of the rope.

☐ Thread the strap through the D-rings, over the handle already there and press over the handle, well into the side of the rope so that it moulds to this shape (fig.6). If the leather is reluctant to go into the required shape, soften it with water first.

☐ Mark a stitching line along either side of the rope and stitch along the two lines as before (see fig.6).

☐ Remove all sharp or uneven edges from the handle with the edge shave and sharp knife.

☐ Dye the handle and handle attachments.

☐ Bend the handle slightly as it should be on the suitcase.

☐ Punch holes in the handle attachments to accommodate rivets if these are to be used.

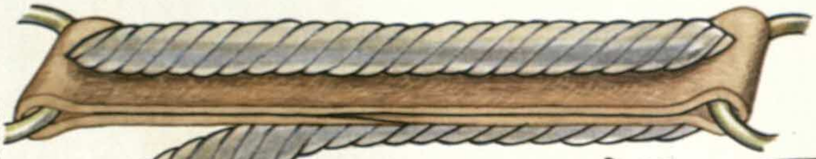
☐ Position the handle on the suitcase, with the handle attachments slightly closer together than the old ones were.

☐ Draw round the handle attachments to mark the area to be glued.

☐ Make a dot through the punched holes in the handle attachments to mark where to punch the holes for the rivets in the suitcase.

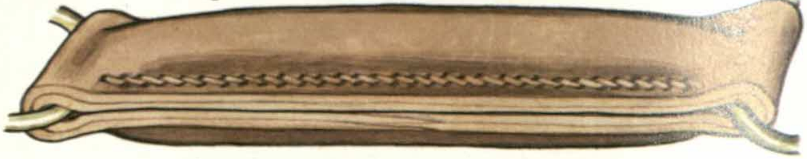
☐ Remove handle and punch two holes on the marks.

☐ Glue the marked area on the case and the underside of each handle



Barbara Firth

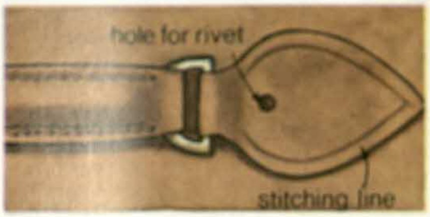
5. *Rope is used to shape the handles.*



6. *Leather is stitched over the rope.*

attachment and press down firmly.

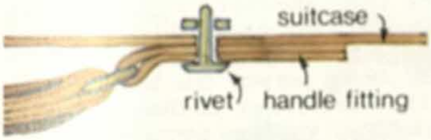
☐ Make stitching lines and stitch marks 3mm ($\frac{1}{8}$") from the edge on the handle attachments (fig.7).



7. *Handle attachments are stitched on.*

☐ Stitch along these lines as before.

☐ Put half of each rivet in one side of each hole and the other half in the other side and, using the hammer, secure the rivets (fig.8).



8. *Rivet is attached as shown.*

☐ Replace lining.

This shows how to make a standard suitcase handle—handbags and briefcases may have different types of handles (fig.9).

9. *Alternative briefcase and bag handles made of leather.*

Patches

Worn parts of leather that have gone or are about to go can be patched with new pieces of leather.

You will need:

Vegetable-tanned russet hide 3mm ($\frac{1}{8}$") thick, slightly larger than the area to be patched.

Leather dye and methylated spirit.

Soft pencil.

PVA adhesive such as Evo-stik.

Scissors, skiving knife, tracing paper.

Sharp knife such as a Stanley knife.

☐ Place the tracing paper over the worn patch and draw round the area to be covered.

☐ Cut out the piece of tracing paper, place on the grain side of a piece of russet hide and draw round with a soft pencil.

☐ Cut out the piece of leather.

☐ Place the piece of leather grain side down on a hard surface and skive down the flesh side all round the edge of the piece to a paper-thin edge so that when the patch is in position, it will blend smoothly with the surface of the leather.

☐ Mix up leather dye to match the leather being patched and apply a coat to the new patch. Apply as many coats as necessary to get the right colour.

☐ Clean the area on the leather to be patched by rubbing with methylated spirit so that the glue will adhere.

☐ Spread some glue on the area to be patched and on the flesh side of the patch.

☐ Place the patch in position and press down firmly.

☐ When the glue is dry, apply a coat of wax polish.

Re-stitching

Any stitching that has come undone can be replaced provided the leather is still strong. Replacing stitching is the same as ordinary leather stitching using two needles, but in order to avoid weakening the leather, use the holes that are already there.

On thinner leathers the stitching should, if possible, be done by hand. If not, use a large machine stitch to avoid making too many new holes in the leather.

If the leather is very weak, patch along the line of stitching following the instructions in the previous section on patches, and then stitch as usual over the new patch.

Cleaning the fittings

If the article you are working on has any metal fittings, these must also be restored. Broken fittings must obviously be replaced, but if they are still in working order, polish them up using the appropriate metal polish. Protect the leather surrounding the fittings with a thick coat of beeswax during polishing.

On the suitcase illustrated, the locks were very corroded but still in working order. A good clean showed that they were made of brass, and they add considerably to the look of the restored suitcase.

Cleaning

The leather should be given a clean by wiping with a weak solution of detergent to remove dirt, and then polishing with wax polish. Several coats of polish may be necessary to restore the leather to its former glory. Use a coloured wax polish which will stain any worn patches to the right colour. On the suitcase, dark tan polish was used.

If the leather is very dry and worn, give it a coat of Hide Food made by Connolly's, and rub dry with a cloth. Then polish with a coloured wax polish.

Suitcase, deed box and collar box all in need of restoration were bought quite cheaply from a local market.

Paul Kemp

Versatile cabinet units

A compact rectangular unit is made by continuing the doubling up process of the square module to form a rectangle with a front elevation of 50cm x 100cm (20″x 40″). It can be made in any depth depending on the width of the board. Using the width of the available chipboard to determine the depths of the units eliminates unnecessary and expensive cutting of the board.

The larger rectangular unit can be stood on end and fitted with drawers or laid on its side and adapted to house a record unit, or else provide space for an easily accessible yet unobtrusive drinks cabinet. Another alternative is to fit the unit into a corner of a room to serve as a secluded writing bureau.

The rectangular units can be fitted with fold-down doors which are described further on. The instructions are for a rectangular unit 38.1cm deep.

You will need:

Two pieces 16mm thick chipboard 96.8cm long x 381mm wide.

Two pieces of 16mm chipboard 46.8cm long x 381mm wide.

Four pieces 16mm x 16mm ramin batten, 381mm long.

6mm dowelling 75cm long.

One piece 3mm hardboard 97.4cm long x 474mm wide—for the back.

For each fixed shelf or partition use 16mm chipboard, 46.8cm x 36.6cm.

Two pieces 12mm plywood, 46.9cm x 36.6cm for the sliding shelves in the drinks cabinet.

One piece 16mm chipboard 96.8cm long x 468mm wide—for an inset door.

One piece 16mm chipboard 99.4cm long x 494mm wide—for a lay-on door.

Hardware—see box (page 2352).

☐ Construct the carcass as shown in fig.1 (opposite).

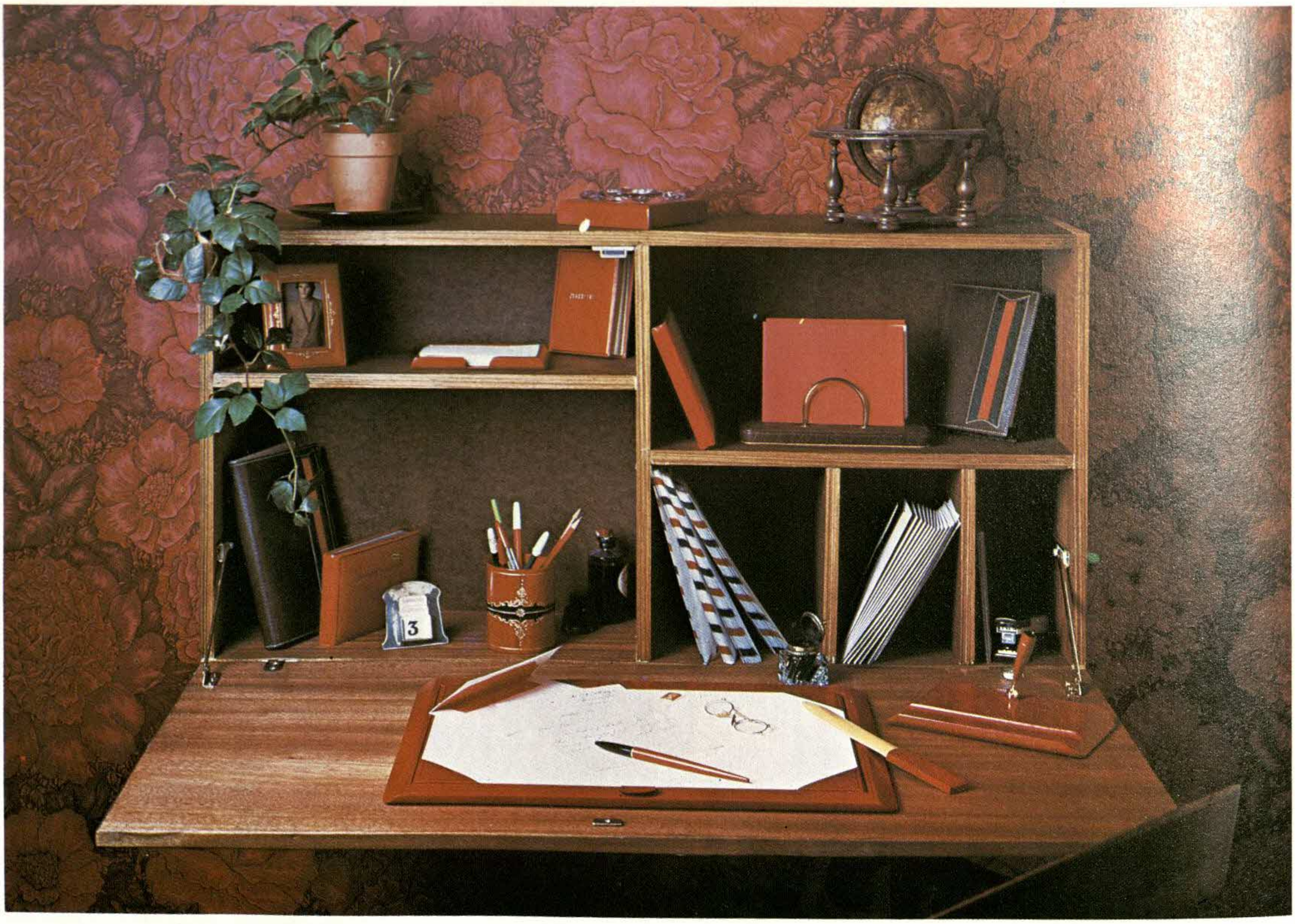
The layout of the interior can be adapted to suit your requirements and some alternatives are given (figs.2a, b and c).

Partitions or shelves

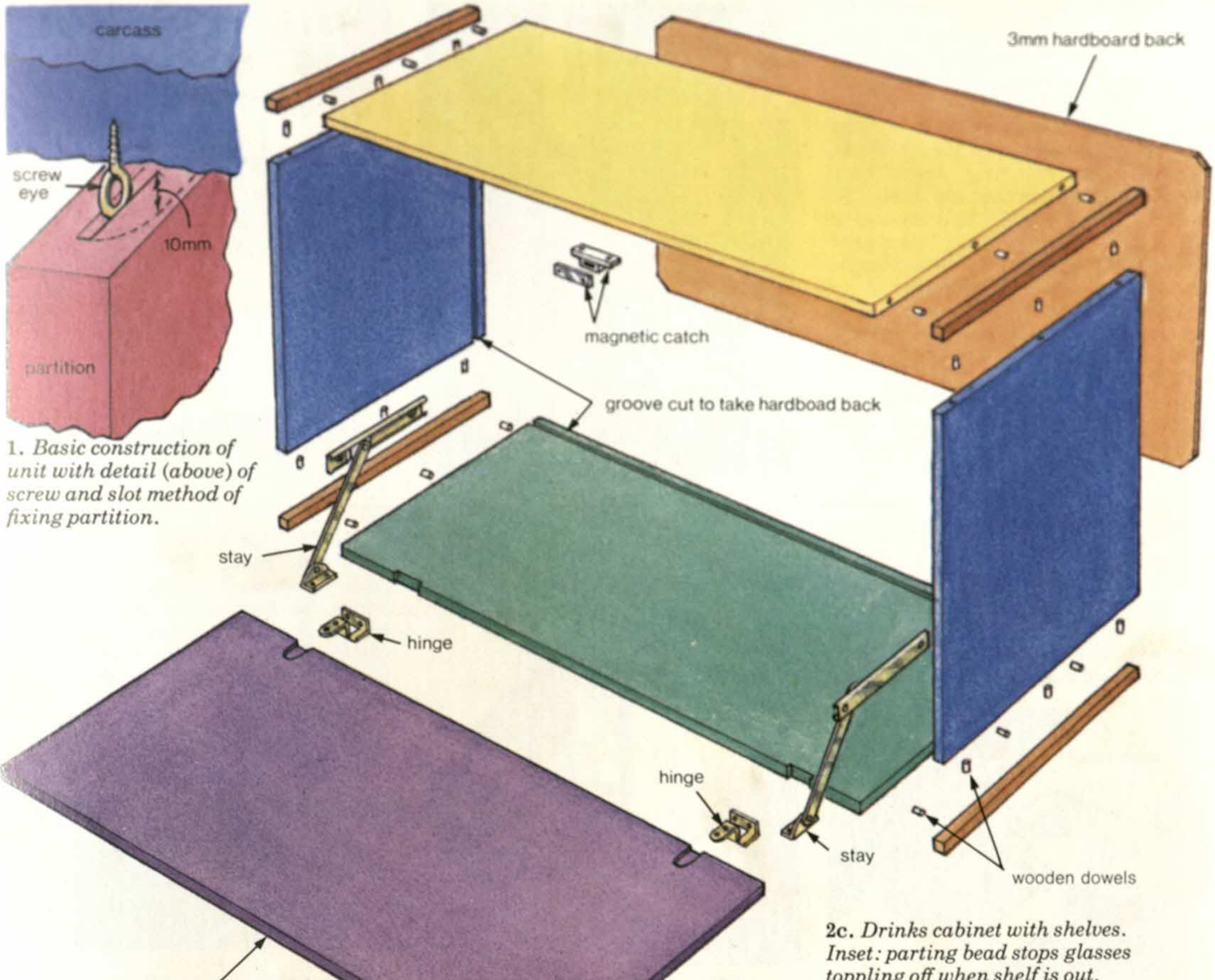
If the unit is to be used horizontally, attach partitions with screw eyes fitted into the sides of the carcass. A groove is cut into the side of the chipboard to be used as the partition which slides over the screw eyes (see detail fig.1). This allows you to change the position of the partitions without any effort or damage to the unit.

If you use the unit vertically and wish to fit shelves, the same technique can be used. However, if you feel the weight of the objects will be too heavy for this, shelves can be fitted using a chipboard fastener (see box overleaf). The disadvantage of these fittings is that they are more permanent; if you do wish to alter them, the carcass has been damaged by the screws passing right through the chipboard.

A wall-mounted writing bureau with a natural wood finish.

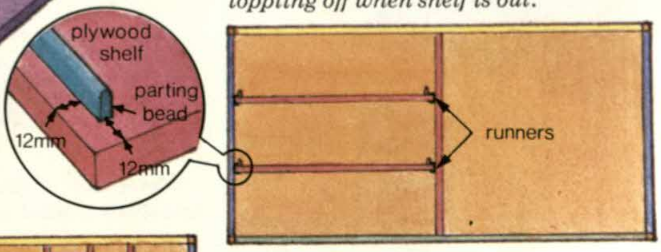


Paul Kemp

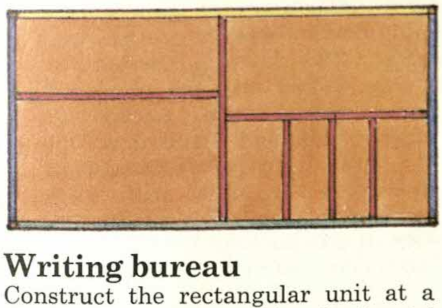


1. Basic construction of unit with detail (above) of screw and slot method of fixing partition.

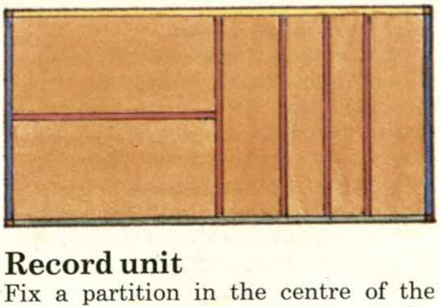
2c. *Drinks cabinet with shelves. Inset: parting bead stops glasses toppling off when shelf is out.*



2a. *Partitions for writing bureau.*



2b. *Record unit.*



Paul Williams

Writing bureau

Construct the rectangular unit at a depth of your choice. Fit a horizontal shelf in the centre using the slot and screw eye method. The two sides are then sub-divided with horizontal and vertical partitions as shown in fig.2a also using the slot and screw eye method. The facing edges can be veneered or filled and painted.

Record unit

Fix a partition in the centre of the carcass and lay out the rest of the interior as shown in fig.2b. The four vertical partitions are fitted using the slot and screw eye method. The horizontal shelf is fitted with the same technique, though if you have a heavy amplifier or tape recorder to put on it, you can use chipboard fasteners.

Drinks cabinet

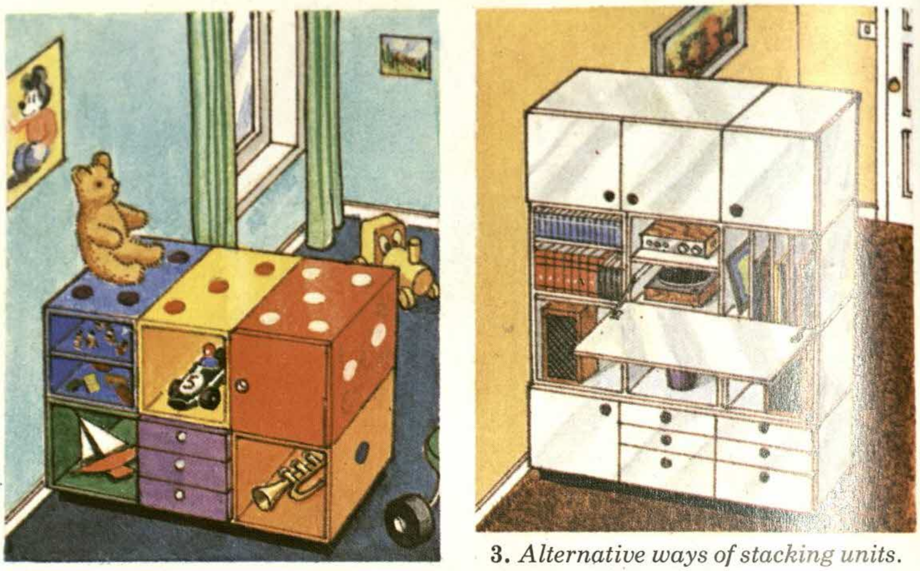
The cabinet is also divided down the centre with a partition using the same method as described previously. One half of the cabinet is used to store bottles and the other is fitted with sliding shelves (fig.2c).

Runners. You will need two runners for each shelf. These are screwed to the sides of the carcass. The shelves are cut from 12mm plywood, 46.9cm wide and 36.6cm deep (for a cabinet 38.1cm deep). Pin and glue parting bead on two sides and at the back of the shelf. These must have mitred corners (Carpentry chapter 3, page 158) and be set 12mm in from the edges of the plywood (see inset fig.2c).

Stacking

In the previous chapters, most of the units have been arranged on or against the walls of a room. An alternative way of using the units is to have them free-standing so they serve as a room divider and storage area (fig.3). When stacking free standing units, they should be fixed together for safety. To do this, drill holes through the top of each unit. Screw No.8 chipboard screws 2.5cm long up into the underside of the unit above. This method of fastening is easy to dismantle but is secure enough to prevent children from toppling a unit if they happen to clamber on to the arrangement.

If your floor is very uneven, stand the units on a plinth which can be adjusted to cater for the unevenness (Carpentry chapter 25, page 2283).

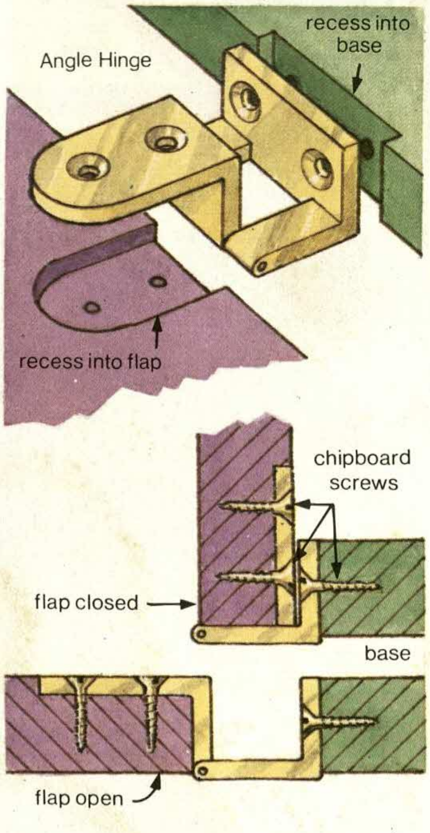

Paul Williams

3. *Alternative ways of stacking units.*

Hardware

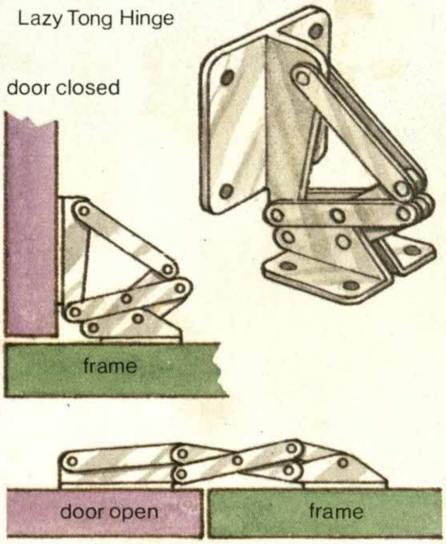
Hinges.

The flap door hinges are different from those used on the hung door—ie a door fitted to a vertical cupboard. The angle hinge shown here is used on a lay-on type door. This type of hinge is usually more practical for a flap down arrangement as, when the flap is opened, it is flush with the top surface of the base of the carcass. Use stays to support open flap.



Attaching the angle hinge.

The same effect can be achieved with inset doors if a hinge called the Lazy Tong hinge is used.



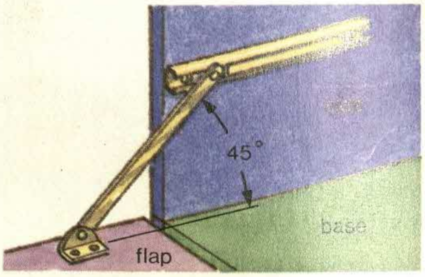
The lay-on or Lazy Tong hinge suitable for inset and lay-on doors.

These hinges are also referred to as lay-on hinges because they are not recessed into the wood. These hinges, however, are not so easy to find but are very easy to fit. They are suitable for inset and lay-on doors. Inset doors can also be fitted with simple butt hinges (see Carpentry chapter 25, page 2280) but in this case the flap will not fold down flush with the base of the unit.

Stays.

Stays are attached between the fold-down door and the carcass of the unit and act as supports for the door.

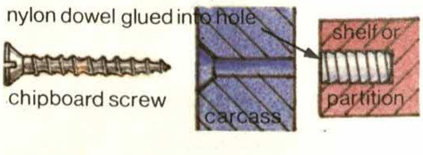
Two friction stays are used on the fold-down door to act as supports. To fasten them, first attach the door on its hinges and open the door. Screw the foot of the stay to the edge of the flap in a position where the arm is at a 45° angle to the open flap. Check the level of the flap with a spirit level before fastening. The slide is screw fixed with chipboard screws in a horizontal position into the side of the cabinet as shown above.



Fitting stays to support flap.

Chipboard fastener.

Sometimes referred to as a recessed fitting, this fastener is a hollow nylon dowel threaded on the outer surface. This dowel is inserted into a hole drilled into the chipboard thus providing a secure anchor into which a chipboard screw is driven. For added strength the dowel can be glued into the recess with white woodworking adhesive. The dowels vary in size but one 1.2cm long by 5mm in circumference is ideal.



A chipboard fastener.

Paul Kemp

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